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ABSTRACT

The career exploration program in Georgia was developed to provide adolescent youth with the knowledge and experiences that enable them to be aware of various career opportunities and develop tentative plans to accomplish career goals. The instructional unit consists of minicourses in four areas related to industrial arts. The four occupational areas are: (1) communication, (2) construction, (3) manufacturing, and (4) transportation. For each minicourse, objectives, learning experiences, instructional resources, and suggested evaluations are listed. (VA)

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A CURRICULUM GUIDE FOR A CAREER EXPLORATION PROGRAM IN THE MIDDLE/JUNIOR HIGH SCHOOLS OF GEORGIA FOR INDUSTRIAL ARTS EDUCATION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Preface

The mini-course outlines for the career exploration program in Agriculture, Business, Home Economics and Industrial Arts were developed by participants in an institute sponsored by the Division of Vocational Education at the University of Georgia, from June 14 to July 2, 1971.

The middle school teachers involved in the development of the curriculum were given an opportunity to enroll in an internship program upon completion of the institute. During the 1971-72 school year the curriculum was implemented, field-tested and revised by the participants in the internship program. The following participants prepared the Industrial Arts final mini-course outlines:

Robert Alexander
Billy Campbell
Bill Gaulding
Dean Pierce
Theodore Pittman
Walter Queen
Richard Runge

The Career Exploration Program was developed to provide adolescent youth with knowledge and experiences that enable them to be aware of various career opportunities and develop tentative plans to accomplish career goals. An articulated and sequential program is needed to give students the opportunity to accomplish career tasks according to their own individual physical, social, and intellectual development. Students should be given opportunities to investigate and analyze a wide range of occupational roles and work tasks with respect to their own individual

characteristics, abilities, and interests. Learning activities should be designed to provide live and simulated career exploration experiences in broad families of occupations. Specifically, the program should allow students to accomplish these tasks or dimensions of career development:

> Understanding of Self-Characteristics: From recognition of likes and dislikes to the development of personal characteristics appropriate for a given occupation.
>
> Occupational Areas: From recognition of observable jobs in the community to acquiring training for and entrance into a chosen field.
>
> Educational Avenues: From recognition of the relationship between subject matter and observable community jobs to acquiring education necessary for entrance into a chosen field.
>
> Educational and Vocational Decisions: From recognition of factors that influence decision-making to pursuing a career.
>
> Economic and Social Values of Work: From recognition of the economic and social contribution of parents' occupations to the selection of an appropriate occupation and work setting.
>
> Psychological and Sociological Meaning of Work: From expressing a positive attitude toward self, associates, and school to purposeful involvement in work and work-related activities.
>
> Gene Bottoms and George L. O'Kelley, "Vocational Education as a Developmental Process," American Vocational Journal, 46:21-24, March, 1971.

The career exploration program is organized to accommodate, and be compatible with existing programs. A three-year program is suggested for the middle/junior high school to allow students to be initially exposed to broad career areas in the first year. The second year students would explore careers related to industrial arts, home economics, business and agriculture, and receive exploratory experiences in specific

occupational families during the third year.

The first-year approach is based upon the existing "Program of Education and Career Exploration."

The organization of this program would provide students with an initial exposure to a wide range of career opportunities in the areas of business, service, outdoors, technology, organizational and expression of ideas. Students would select several areas and be placed in occupational settings within the local community to observe or participate in the performance of various work roles. Upon completion of the observation or participation of observation phase, students would return to a class room and discuss their experiences in terms of the duties performed, competencies needed, education required, and salaries earned. As a result of these experiences, students could begin to make tentative choices of possible career options in terms of their interests, abilities, and self-concept.

During the second year of the program, students could select several occupational families for further exploration that are related to the areas of interest initially investigated during the first year. Opportunities would be provided for students to enroll in a series of "mini-courses" that would be offered during each quarter of an academic year as shown in Figure 1. Learning experiences of the program would emphasize occupational role playing by students in a simulated work environment. Activities such as constructing small structures, preparing and serving food, distributing and selling a product, or landscaping a portion of the school campus would enable students to examine

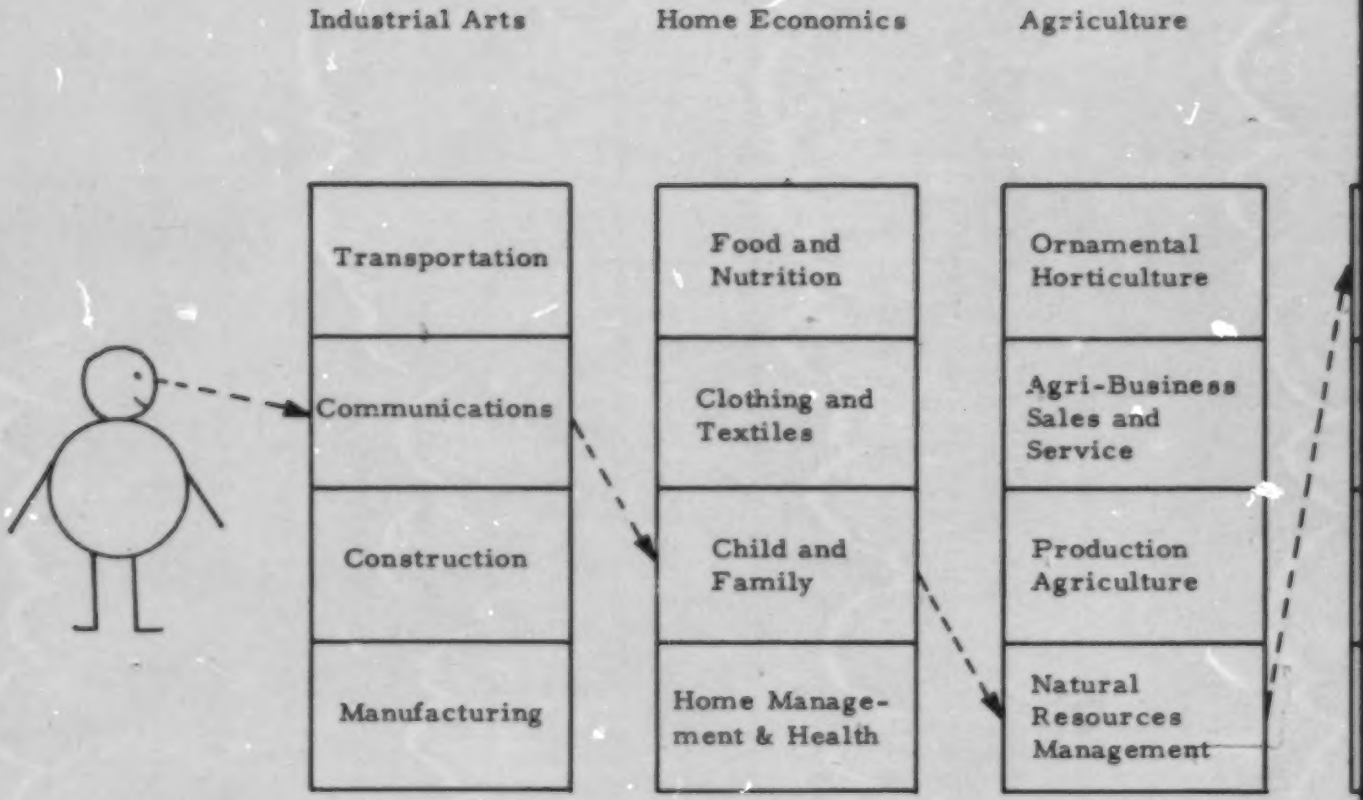

FIGURE 1

Suggested "Mini-Course" Offerings for an Eighth Grade Career Explora
the Middle/Junior High School Level.

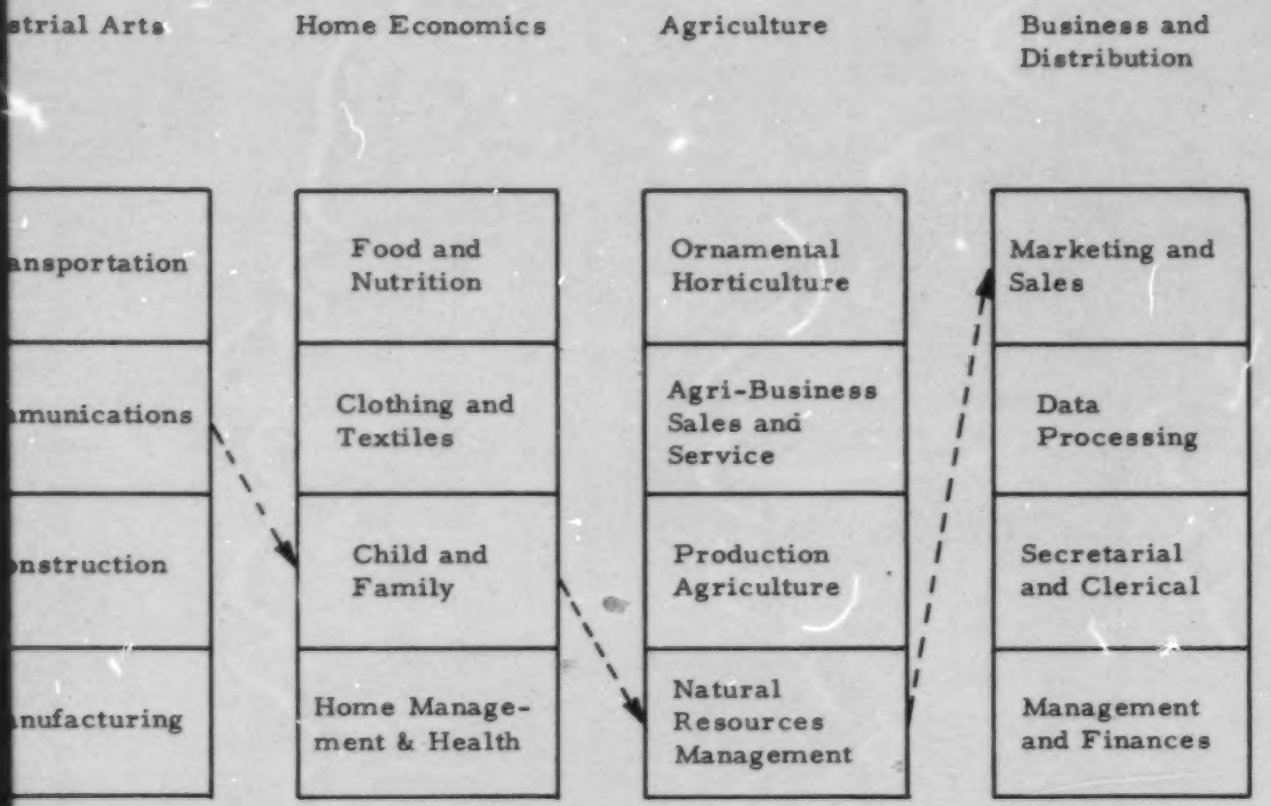

FIGURE 1

ested "Mini-Course" Offerings for an Eighth Grade Career Exploration Program at Middle/Junior High School Level.

various work roles and acquire manipulative skills and knowledge related to the occupational area. The subject areas of mathematics, science, social studies and English should be correlated with the learning activities of the programs. Instructional teams could be formulated which would interlock the curriculum and enable students to make application of the concepts and principles in tangible learning situations.

The third year program would allow students to select a single occupational area for further investigation and exploration. Occupational families related to the instructional areas of industrial arts, home economics, business, and agricultural education would enable students to obtain further development of attitudes, skills and knowledge needed to make further career decisions.

The success of the career exploration program will be dependent upon the cooperation and support of the local community, school administration, and teachers. Provisions must be made for business leaders in the community to participate in supervised occupational experiences. Administrators and guidance personnel must develop flexible scheduling systems that enable students to select and obtain experiences in broad families of occupations. Methods should be developed that allow teachers to plan and implement instruction on a team basis which will correlate and interlock instructional content and learning activities.

In conclusion, the proposed career exploration program should provide a method whereby all students may be exposed to a wide range of available career opportunities. Student involvement in actual and simulated occupational role playing may enable young people to obtain

experiences which are purposeful and beneficial in selecting and planning for a career of their choice. It is anticipated that the program will enable young people to obtain the knowledge and experience base which will allow them to intelligently choose a career, develop plans to attain that career goal, and eventually function successfully in the career of their choice.

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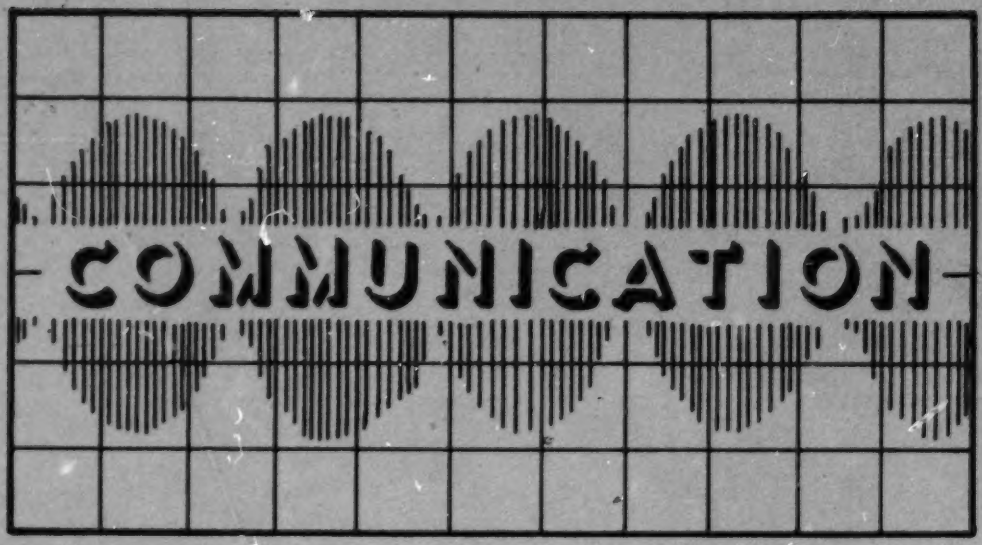

COMMUNICATION

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT I COMMUNICATION OVERVIEW	UNIT I COMMUNICATION OVERVIEW	UNIT I COMMUNICATION OVERVIEW	
A. REQUIREMENTS FOR ALL ACTIVITIES	A. TYPES OF LEARNING ACTIVITIES UTILIZED	A. TYPES OF INSTRUCTIONAL RESOURCES USED	
As each event or sequence of events is chosen by the student or assigned to him, the student will maintain a notebook of his own design and outline on these activities. Included in the notebook will be at least the following information: 1. Handouts and reference materials given him or her. 2. For each grouping of occupations as appropriate: a. a list and brief description of representative occupations.	For each objective, a related learning activity is suggested. Examples of such activities include: 1. Development of descriptive materials such as charts and lists. 2. Written descriptive paper on attitudes, skills, and cognitive requirements of occupations. 3. Individual activities such as demonstrations and tasks exposures. 4. Group and class activities. 5. Simulated experiences in occupations such as work tasks, skill requirements, environmental conditions, and techniques of a job.	For each objective, related instructional resources are suggested. Examples of such resources include: 1. BOOKS a. Texts b. Historical c. Encyclopedias d. Dictionary e. Reference 2. LECTURE/DEMONSTRATION a. Resource people b. Instructors c. Commercial public service organizations d. Student presentation 3. PRINTED MATERIALS a. Manuals b. Pamphlets	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT I COMMUNICATION OVERVIEW	UNIT I COMMUNICATION OVERVIEW	UNIT I COMMUNICATION OVERVIEW
YPES OF LEARNING CTIVITIES UTILIZED	A. TYPES OF INSTRUCTIONAL RESOURCES USED	A. TYPES OF SUGGESTED EVALUATION USED
each objective, a related ing activity is suggested. nples of such activities in-:	For each objective, related instructional resources are suggested. Examples of such resources include:	For each objective, related evaluation is suggested such as:
evelopment of descriptive terials such as charts and s.	1. BOOKS a. Texts b. Historical c. Encyclopedias d. Dictionary e. Reference	1. Charts, lists, and collage constructed to give occupational information.
Written descriptive paper on tudes, skills, and cognitive uirements of occupations.	2. LECTURE/DEMONSTRATION a. Resource people b. Instructors c. Commercial public service organizations d. Student presentation	2. Research paper jointly evaluated by instructor and interlock teacher.
ndividual activities such as nonstrations and tasks exures.	3. PRINTED MATERIALS a. Manuals b. Pamphlets	3. Observation of individual demonstration and presentation.
roup and class activities.		4. Observation of team or group demonstration and presentation.
imulated experiences in ocations such as work tasks, l requirements, environtal conditions, and techues of a job.		5. Evaluation by panel of peers.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
b. a description of ways technology has or possibly will affect the area of communications. c. a discussion of ways government, unions, or the public affects the occupations. d. a list of advantages and disadvantages of representative occupations. e. a list of attributes needed by a person entering the field. f. a summary of representative salary ranges, potential growths, and employment outlook. g. a list of social demands such as speaking engagements, appearances, acceptances, etc.	6. Use of related commercial equipment, materials, and supplies. 7. Written and oral reports as a result of research assignments. 8. Development of materials. 9. Outside assignments. 10. Field trips to occupational areas. 11. Utilization of resource people representing semi-skill, skill, and professional occupations. 12. Teacher and resource people discussion/demonstration. 13. Role playing by the student.	4. FILMSTRIPS 5. FILMS 6. FIELD TRIPS 7. Use of equivalent commercial equipment, materials, and supplies. 8. RESOURCE PEOPLE a. Teachers b. Skilled/semi-skilled c. Professional	

COMMUNICATION

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Use of related commercial ipment, materials, and plies. Written and oral reports as esult of research assign-nts. Development of materials. Outside assignments. Field trips to occupational as. tilization of resource people resenting semi-skill, skill, professional occupations. eacher and resource people cussion/demonstration. ole playing by the student.	4. FILMSTRIPS 5. FILMS 6. FIELD TRIPS 7. Use of equivalent commercial equipment, materials, and supplies. 8. RESOURCE PEOPLE a. Teachers b. Skilled/semi-skilled c. Professional	6. Written assignments: a. discussion question b. explanatory paragraph c. resumé d. summary e. explanatory story 7. Project or exercise evaluated by prescribed criteria. 8. Oral reports, comments, or answering to direct question. 9. Research report. 10. Group questioning. 11. Observation of role playing. 12. Structured question handouts.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
h. a description of skills, educational attainment, physical demands, and attitudes for successful employment. The above is to be accomplished in addition to specific requirements suggested later.			

COMMUNICATION

...NING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT II COMMUNICATIONS	UNIT II COMMUNICATIONS	UNIT II COMMUNICATIONS	
A. INTRODUCTION	A. INTRODUCTION	A. INTRODUCTION	A
1. The student will identify several major historical developments of his own choosing in communications during the history of man.	1. a. Using any of the standard methods of producing a chart, the student will develop his own chart noting dates, important people, and devices of historical significance. b. In cooperation with the communications skills teacher, the student may produce a brief descriptive paper on the history of communications.	1. BOOKS Ashford, Theodore A. From Atoms to Stars, New York: Holt, Rinehart and Winston, Inc., 1960. Costain, Thomas B. The Chord of Steel, New York: Doubleday and Co., Inc., 1960. Fleming, J. A. Fifty Years of Electricity, New York: Wireless Press, Inc. French, Thomas E. and Carl L. Svensen. Mechanical Drawing, McGraw-Hill, 1968. Garnett, William. Heroes of Science, New York: E. and J. B. Young and Co., 1885. Groneman, Chris H. Exploring the Industries, Austin, Texas: Steak-Vaughn Co., 1962.	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT II MMUNICATIONS TRODUCTION Using any of the standard thods of producing a chart, student will develop his chart noting dates, impor- people, and devices of torical significance. n cooperation with the mmunications skills teacher, student may produce a brief criptive paper on the history ommunications.	UNIT II COMMUNICATIONS A. INTRODUCTION 1. BOOKS Ashford, Theodore A. From Atoms to Stars, New York: Holt, Rinehart and Winston, Inc., 1960. Costain, Thomas B. The Chord of Steel, New York: Double-day and Co., Inc., 1960. Fleming, J. A. Fifty Years of Electricity, New York: Wire-less Press, Inc. French, Thomas E. and Carl L. Svensen. Mechanical Drawing, McGraw-Hill, 1968. Garnett, William. Heroes of Science, New York: E. and J. B. Young and Co., 1885. Groneman, Chris H. Explor-ing the Industries, Austin, Texas: Steak-Vaughn Co., 1962.	UNIT II COMMUNICATIONS A. INTRODUCTION 1. a. Minimum acceptable criteria will be that the chart will have at least two different major developments in three major areas of communications and that each development will include a reference to dates, people, and devices. b. Evaluation of the paper will be a joint effort between the communications skill teacher and the pre-vocational teacher with emphasis being placed on content.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		Maddox, Marion B. and Lavon B. Smith. Elements of American Industry, Bloomington, Ill.: McKnight and McKnight Pub. Co., 1966. Walker, John R. and Edward Plevyak. Industrial Arts Drafting, Homewood, Ill.: Goodheart-Willcox, 1964. Wells, Robert. Messages, Men and Miles, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958. ENCYCLOPEDIAS Encyclopedia Americana Encyclopaedia Britannica Newman, James R. (ed.). The Harper Encyclopedia of Science. 4 vols., New York: Harper and Row Pub., 1963. LECTURE/DEMONSTRATION "Sounds of Yesterday and Tomorrow." Southern Bell Telephone series.	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Maddox, Marion B. and Lavon B. Smith. Elements of American Industry, Bloomington, Ill.: McKnight and McKnight Pub. Co., 1966. Walker, John R. and Edward Plevyak. Industrial Arts Drafting, Homewood, Ill.: Goodheart-Willcox, 1964. Wells, Robert. Messages, Men and Miles, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1958. ENCYCLOPEDIAS Encyclopedia Americana Encyclopaedia Britannica Newman, James R. (ed.). The Harper Encyclopedia of Science. 4 vols., New York: Harper and Row Pub., 1963. LECTURE/DEMONSTRATION "Sounds of Yesterday and Tomorrow." Southern Bell Telephone series.	

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. To give further insight into the impact of communications on present-day man, the student will list different symbols, means, and ways of communicating simple messages and will give examples of each.	2. a. Student constructed list of symbols used to convey simple meanings. Examples could include standard symbols used in drafting, road maps, or highway and street signs. b. Individual student or group activity demonstrating simple means of communication.	2. GUEST SPEAKER This person to represent local communication facilities such as the telephone company, newspaper, radio-television, or graphic arts interests. MISCELLANEOUS Highway department official road maps and drivers manual, driver education manuals, and teachers as resources. STUDENT Will keep a log of television viewing for one week and will report on various means of communication on the viewing.	
UNIT III VISUAL COMMUNICATIONS	UNIT III VISUAL COMMUNICATIONS	UNIT III VISUAL COMMUNICATIONS	
A. DRAFTING OCCUPATIONS	A. DRAFTING OCCUPATIONS	A. DRAFTING OCCUPATIONS	A
1. The student will be able to contrast the different occupational areas in drafting and other	1. Simulated work experiences designed to demonstrate skills requirement, environmental or working conditions, major areas of concern, and likenesses	1. BOOKS AND REFERENCES Bronen, Walter C. Blueprint Reading for Industry, Homewood, Ill.: Goodheart-Willcox, 1972.	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
tudent constructed list of nbols used to convey simple anings. Examples could in-de standard symbols used rafting, road maps, or hway and street signs.	2. GUEST SPEAKER This person to represent local communication facilities such as the telephone company, newspaper, radio-television, or graphic arts interests. MISCELLANEOUS Highway department official road maps and drivers manual, driver education manuals, and teachers as resources. STUDENT Will keep a log of television viewing for one week and will report on various means of communication on the viewing.	2. a. The student constructed list of symbols will be compiled with the class to see how many different examples of symbols were devised. This activity may by the use of observation give a clue as to the interest of a student or the class as a whole. b. Individual or team demonstration of communications symbols will be discussed and evaluated by a preselected panel of peers.
ndividual student or group ivity demonstrating simple ans of communication.		
UNIT III VISUAL MMUNICATIONS	UNIT III VISUAL COMMUNICATIONS	UNIT III VISUAL COMMUNICATIONS
RAFTING OCCUPATIONS	A. DRAFTING OCCUPATIONS	A. DRAFTING OCCUPATIONS
mulated work experiences ned to demonstrate skills irement, environmental or ing conditions, major areas ncern, and likenesses	1. BOOKS AND REFERENCES Bronen, Walter C. Blueprint Reading for Industry, Homewood, Ill.: Goodheart-Willcox, 1972.	1. Student will differentiate by briefly writing a paragraph discussing the difference between four drafting occupations.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
graphic industries. Representative occupations might be:	between various drafting occupations. This could include free-hand sketching, instrument drawing, and design techniques. Examples are:	Dictionary of Occupational Titles (Vols. I and II and Supplement). U. S. Government Printing Office.
a. Architectural draftsman.	a. Architectural draftsman--design and draw a dream mountain cabin or dream house floor plan.	Employment Outlook, Technicians, Engineering, and Science Technicians, Draftsmen. Cat. No. L2. 3:1650-27. Supt. of Documents, U. S. Government Printing Office.
b. Engineering draftsman.	b. Engineering draftsman--electrical engineering (automotive circuit, electrical schematic), civil engineering (contour map of local area), mechanical engineering (gear or simple lever operation sketch).	Occupational Outlook Handbook, 1970-71. Cat. No. L2. 3:1650. Supt. of Documents, U. S. Government Printing Office.
c. Commercial artist.	c. Commercial artist--cartoon advertisement.	FILMSTRIP
d. Designer.	d. Designer (design an advertisement selling a school activity).	K-3, The Community Series Communications Set Communication: Communicating ideas, newspaper, television, radio, motion pictures, telephone, books. Communicating Without Sound, McGraw-Hill Allied Sound-Visual Education, Memphis, Tennessee.
e. Salesman of drafting equipment	e. Salesman (design a package of equipment and "sell" the equipment to a group of "employers").	
f. Computer reproduction	f. Computer (obtain, if possible, examples of computer drawings and list skills).	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
een various drafting occupa- . This could include free- sketching, instrument draw- and design techniques. nples are: rchitectural draftsman-- ign and draw a dream moun- cabin or dream house floor n. ngineering draftsman-- ctrical engineering (automo- circuit, electrical sche- ic), civil engineering (con- r map of local area), me- nical engineering (gear or ple lever operation sketch). ommercial artist--cartoon ertisement. esigner (design an adver- ment selling a school vity). alesman (design a package quipment and "sell" the ipment to a group of "em- yers"). omputer (obtain, if possible, mples of computer drawings list skills).	Dictionary of Occupational Titles (Vols. I and II and Supplement). U. S. Government Printing Office. Employment Outlook, Technicians, Engineering, and Science Technicians, Draftsmen. Cat. No. L2. 3:1650-27. Supt. of Documents, U. S. Government Printing Office. Occupational Outlook Handbook, 1970-71. Cat. No. L2. 3:1650. Supt. of Documents, U. S. Government Printing Office. FILMSTRIP K-3, The Community Series Communications Set Communication: Communicating ideas, newspaper, television, radio, motion pictures, telephone, books. Communicating Without Sound, McGraw-Hill Allied Sound-Visual Education, Memphis, Tennessee.	He will then comment on how he would feel about any one as a career choice or not and why. OR The student will demonstrate the task necessary to be a particular type of draftsman by sketching, drawing to scale, or completing several drawings. OR If chosen, the student will demonstrate the task necessary to be a commercial artist or designer by designing a sample advertisement. OR For example, if chosen, the student will demonstrate his understanding of selling drafting equipment by preparing and presenting a sales package emphasizing prices, advantages, and disadvantages of said equipment as it relates to a buyer.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
B. PHOTOGRAPHY OCCUPATIONS 1. The student will contrast traits, personalities and the different roles of five types of photographic occupations. Representative occupations might be: a. Portrait photographer b. News photographer c. Movie film industry d. Film processor e. Retailer merchants f. Manufacturer	B. PHOTOGRAPHY OCCUPATIONS 1. a. Given a list of examples of photographic careers or jobs, the student will select from these or suggest his own choice of several occupations of which five types will be considered as representative. On this choice, the student will differentiate between the duties of each, the hazards of each, the benefits of each, and how he feels he would react to one or more of the possible career choices. b. One or several class members will research and report on a specific job found in photography. The student(s) will demonstrate traits of this job and discuss related information before the class.	B. PHOTOGRAPHY OCCUPATIONS 1. BOOKS AND REFERENCES Employment Outlook, Photographers, Photographic Laboratory Occupations. Cat. No. L2. 3:1650-40, Supt. of Documents, U. S. Government Printing Office. LaCour, Marshall and Irvin T. Lathrop. Photo Technology, Chicago: American Technical Society, 1969. Marinaccio, Anthony. Exploring the Graphic Arts. Van Nostrand, 1959. Pollack, Peter. Picture History of Photography. H. Abrams, 1958. Turnbull, A. T. Graphics of Communication. Holt, 1968. RESOURCE PERSON A news photographer, club member of a local or school photographers club, school newspaper sponsor, or local retail merchant.

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
HOTOGRAPHY OCCUPA-IONS iven a list of examples of tographic careers or jobs, student will select from se or suggest his own choice several occupations of which types will be considered representative. On this ice, the student will dif-entiate between the duties ach, the hazards of each, benefits of each, and how eels he would react to one more of the possible career ices. ne or several class mem-s will research and report specific job found in pho-raphy. The student(s) will onstrate traits of this job discuss related informa-before the class.	B. PHOTOGRAPHY OCCUPATIONS 1. BOOKS AND REFERENCES Employment Outlook, Photographers, Photographic Laboratory Occupations. Cat. No. L2. 3:1650-40, Supt. of Documents, U. S. Government Printing Office. LaCour, Marshall and Irvin T. Lathrop. Photo Technology, Chicago: American Technical Society, 1969. Marinaccio, Anthony. Exploring the Graphic Arts. Van Nostrand, 1959. Pollack, Peter. Picture History of Photography. H. Abrams, 1958. Turnbull, A. T. Graphics of Communication. Holt, 1968. RESOURCE PERSON A news photographer, club member of a local or school photographers club, school newspaper sponsor, or local retail merchant.	B. PHOTOGRAPHY OCCUPATIONS 1. a. The student will by writing a brief sample resume for an imaginary job of his choice contrast traits, personalities and different roles of this job to four other photographic occupations. He will also include a brief summary of how he would react to one or more of these jobs as a possible career choice. b. Observation of the student(s) demonstration and discussion of a specific job found in photography. Emphasis will be placed on specifics of content.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. The student will demonstrate and perform the task necessary to be a photographer by taking, developing, and printing pictures.	2. The simulated learning experience will consist of four sequences: these being first, planning required for subject choice and taking of pictures; second, obtaining insights into the skills required of developing by actual developing the film or of visiting a print shop; third, printing the picture from the film or visiting a print shop; and, fourth, giving a written or oral report on his attitude towards the job requirements of the above areas.	2. BOOKS AND REFERENCES Better Homes and Gardens, Photography for Your Family. New York: Meredith Press, 1964. Kodak instructional sheet packaged with film. Kodak has several publications on various subjects of interest that can be obtained at retail and photographic suppliers. McCoy, Robert A. Practical Photography. Bloomington, Ill.: McKnight and McKnight Pub. Co., 1959. RESOURCES Camera and equipment as available and appropriate.	
3. The student will explore the occupational possibilities of a film producer. Script writing, planning, taking, and producing a film will be emphasized.	3. a. Using the picture developed, write an explanatory story about the picture (interlock with English instructor). b. Develop a slide film presentation with a script that could be taped on conventional tape recorder.	3. BOOKS AND REFERENCES (Same as 2 above.) RESOURCES Cameras, video equipment, and other equipment as available and appropriate.	

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
e simulated learning ex- nce will consist of four ences: these being first, ing required for subject e and taking of pictures; d, obtaining insights into kills required of develop- y actual developing the film visiting a print shop; third, ng the picture from the or visiting a print shop; and, , giving a written or oral t on his attitude towards b requirements of the areas.	2. BOOKS AND REFERENCES Better Homes and Gardens, Photography for Your Family. New York: Meredith Press, 1964. Kodak instructional sheet packaged with film. Kodak has several publications on various subjects of interest that can be obtained at retail and photographic suppliers. McCoy, Robert A. Practical Photography. Bloomington, Ill.: McKnight and McKnight Pub. Co., 1959. RESOURCES Camera and equipment as available and appropriate.	2. The student will take, develop, and print a picture to show that he has been exposed to these different occupational areas of a photographer. OR Based upon a visit to a print shop, the student will be required to give a written or oral report on his attitude towards the job requirements.
sing the picture developed, e an explanatory story about picture (interlock with Eng- instructor). evelop a slide film presen- on with a script that could aped on conventional tape order.	3. BOOKS AND REFERENCES (Same as 2 above.) RESOURCES Cameras, video equipment, and other equipment as available and appropriate.	3. a. The explanatory story will be jointly evaluated as to content by the English instructor and the pre-vocational teacher. b. The slide, film, or tape presentation and script will be evaluated

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
Emphasis also will be placed on the role of advertising.	c. Produce a script for the production of a super 8 three to five minute film selling a product. d. Use of video tape equipment and the production of a three to five minute sales film.	
4. Given a camera to use, the student will experience the duties of a news photographer.	4. The student will cover some event such as a ballgame, dedication, construction job, etc. and make a sequence of pictures suitable for a news report. A brief written account of the events should be attached.	4. BOOKS AND REFERENCES (Same as 2 above.) RESOURCES (Same as 2 before.) RESOURCE PERSON Local news photographer to hold a discussion and demonstration.
5. The student will be exposed to the role of sales opportunities in photography.	5. a. The student after class will visit and report on opportunities, skills, and rewards related to photographic sales as found in local camera shop, individual photographer's studio, or local newspaper newsroom.	5. BOOKS AND REFERENCES (Same as 2 before.) RESOURCES Field trip to local sales organizations in the community. Have local photographer or retail camera shop personnel give a lecture/demonstration.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Produce a script for the production of a super 8 three to ve minute film selling a roduct. Use of video tape equipment d the production of a three to ve minute sales film.		by a pre-selected group of peers from the class room.
The student will cover some nt such as a ballgame, dedi-ion, construction job, etc. make a sequence of pictures able for a news report. A f written account of the nts should be attached.	4. BOOKS AND REFERENCES (Same as 2 above.) RESOURCES (Same as 2 before.) RESOURCE PERSON Local news photographer to hold a discussion and demonstration.	4. The student will give to the class a brief account of the experiences he has gained as performing the duties of a news photographer. OR The pictures will be evaluated on the subject presented and the best ones could be used in the local or school newspaper.
The student after class will sit and report on opportuni-s, skills, and rewards re-ed to photographic sales as nd in local camera shop, ividual photographer's dio, or local newspaper wsroom.	5. BOOKS AND REFERENCES (Same as 2 before.) RESOURCES Field trip to local sales organizations in the community. Have local photographer or retail camera shop personnel give a lecture/demonstration.	5. a. The student will design a collage depicting the role of sales and advertising in photography.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	b. The student will research the information related to a piece of photographic equipment and will demonstrate by using another student techniques used in selling of photographic equipment.	
C. PRINTING OCCUPATIONS	C. PRINTING OCCUPATIONS	C. PRINTING OCCUPATIONS
1. The student will be able to illustrate traits, personalities, and contrasting roles of five (5) types of printing occupations. These could include the following: (1) Photo-offset (layout and composition, photographic process, flat stripping, plate making, offset printing press man). (2) Silkscreen occupations. (3) Dry process printing (printing, Zerox). (4) Chemical process (blue printing, ditto).	1. a. The student will research and compare five of the printing occupations and evaluate the advantages and disadvantages of these using worker traits, personalities, and contrasting roles as support data.	1. BOOKS AND REFERENCES Dictionary of Occupational Titles (Vols. I and II and Supplement). U. S. Government Printing Office. Hague, C. W. Printing and Allied Graphic Arts. Bruce, 1965. Heller, Jules. Printmaking Today. Holt, 1958. "Printing" Employment Outlook, Printing Occupations, Composing Room Occupations, Photoengravers, Electrotypers, and Sterotypers, Printing Pressmen and Assistants, Lithographic Occupations, Bookbinders and Related Workers. Cat. No. L2.3:

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
The student will research the formation related to a piece photographic equipment and ll demonstrate by using other student techniques used selling of photographic equipent.		b. The student will demonstrate by using another student techniques used in selling photographic equipment.
RINTING OCCUPATIONS	C. PRINTING OCCUPATIONS	C. PRINTING OCCUPATIONS
The student will research and mpare five of the printing cupations and evaluate the vantages and disadvantages these using worker traits, rsonalities, and contrasting les as support data.	1. BOOKS AND REFERENCES Dictionary of Occupational Titles (Vols. I and II and Supplement). U. S. Government Printing Office. Hague, C. W. Printing and Allied Graphic Arts. Bruce, 1965. Heller, Jules. Printmaking Today. Holt, 1958. "Printing" Employment Outlook, Printing Occupations, Composing Room Occupations, Photoengravers, Electrotypers, and Sterotypers, Printing Pressmen and Assistants, Lithographic Occupations, Bookbinders and Related Workers. Cat. No. L2.3:	1. a. As indicated by the student activity, the written research report will be evaluated as instructed. This summary should show contrast of advantages and disadvantages and include references to salary and education requirements and working conditions. The question could be asked to give an answer to why or why not a particular career choice in printing.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
(5) Printing salesman (ex. : selling ads to newspapers). (6) Maintenance and repair. (7) Letterpress.	b. Field trip to local newspaper, independent printing shop, and other local printing occupations represented.	1650-101, Supt. of Documents, U. S. Government Printing Office. Steinberg, S. H. Five Hundred Years of Printing (paper), Penquin Books, 1961. RESOURCE PEOPLE People in the occupations listed or related to give a demonstration when possible of job skills and to discuss their role on their job.
2. The student will be exposed to various occupational skills and become acquainted with some of the characteristics of printing occupations.	2. Simulated work activities could include designing a dummy for offset printing, printing of a linoleum block print, usage of rubber stamp, usage of silk screen process, and printing of an article written and composed by students.	2. BOOKS Cogoli, J. E. Photo Offset Fundamentals, Bloomington, Ill. : McKnight & McKnight Pub. Co., 1967. Eisenberg, James and Francis J. Kafka. Silk Screen Printing, Bloomington, Ill. : McKnight & McKnight Pub. Co., 1957. Kafka, Francis J. Linoeum Block Printing, Bloomington, Ill. : McKnight & McKnight Pub. Co., 1955.

COMMUNICATION

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Field trip to local newspaper, ndependent printing shop, and ther local printing occupations epresented.	1650-101, Supt. of Documents, U. S. Government Printing Office. Steinberg, S. H. Five Hundred Years of Printing (paper), Penquin Books, 1961. RESOURCE PEOPLE People in the occupations listed or related to give a demonstration when possible of job skills and to discuss their role on their job.	b. Group discussion on field trip as to the pros and cons of a career in printing. Possibly during field trip slides could be taken and these slides could be used to stimulate a group or panel discussion on careers in printing.
Simulated work activities ld include designing a dummy offset printing, printing of a oleum block print, usage of ber stamp, usage of silk een process, and printing of article written and composed students.	2. BOOKS Cogoli, J. E. Photo Offset Fundamentals, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1967. Eisenberg, James and Francis J. Kafka. Silk Screen Printing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1957. Kafka, Francis J. Linoeum Block Printing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1955.	2. The student will make a silk screen print to demonstrate his knowledge of occupations found in the silk screen industry. OR A one-page report on one of the occupations in silk screening industry will be written by the student to show his knowledge of a specific occupation. (i. e.: educational requirements,

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
		Kagy, Fred D. Graphic Arts, Homewood, Ill.: Goodheart-Willcox, 1970. Shokler, Harry. Artist's Manual for Silk Screen Printmaking, Tudor, 1960. MISCELLANEOUS Obtain used photo offset plates from printing concern and explain offset processing.
3. Given a list of a number of items which are job printed daily (letterheads, advertising, circulars, etc.), the student should be able to list five (5) educational qualities a printshop owner must have.	3. Students will plan and design five different examples of printing jobs that a print shop owner might have to produce.	3. BOOKS Cleeton, G. U. General Printing. Bloomington, Ill.: McKnight & McKnight Pub. Co., 1963. Latimer, H. C. Advertising Production Planning and Copy Preparation for Offset Printing, Art Directions, 1965.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Kagy, Fred D. Graphic Arts, Homewood, Ill.: Goodheart-Willcox, 1970. Shokler, Harry. Artist's Manual for Silk Screen Printmaking, Tudor, 1960. MISCELLANEOUS Obtain used photo offset plates from printing concern and explain offset processing.	work setting, salaries, potential, etc.). OR The student will make one form of dry print reproduction to demonstrate his understanding of the occupations found in this area of graphics. OR The student will write a two-page report in reference to an interview with either a salesman or repairman connected with the graphics industry.
tudents will plan and design different examples of printjobs that a print shop owner ht have to produce.	3. BOOKS Cleeton, G. U. General Printing. Bloomington, Ill.: McKnight & McKnight Pub. Co., 1963. Latimer, H. C. Advertising Production Planning and Copy Preparation for Offset Printing, Art Directions, 1965.	3. Produce a collage showing five different examples of printing jobs. Evaluation of design and originality to be done by a panel of student "experts."

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
4. The student will compare at least two (2) printing occupations as to the advantages and disadvantages of working in them as perceived by him.	4. Based on the learning activities preceding, the student will prepare a written or oral report on the advantages and disadvantages of two printing occupations as viewed by him.	4. BOOKS Heller, Jules. Printmaking Today, Holt, 1958. Turnbull, A. T. Graphics of Communication, Holt, 1968.
UNIT IV AUDIO COMMUNICATIONS	UNIT IV AUDIO COMMUNICATIONS	UNIT IV AUDIO COMMUNICATIONS
A. RADIO OCCUPATIONS	A. RADIO OCCUPATIONS	A. RADIO OCCUPATIONS
1. The student will be able to evaluate occupational opportunities in the broadcasting industry. Representative occupations might be: (1) Engineer. (2) Announcer. (3) Technician. (4) Programmer.	1. a. Using role playing techniques, a simulated 30-minute programming sequence will be developed to emphasize occupations used in the development of a radio program. This will include programming, newscasting, technical and related supportive staff.	1. a. BOOKS American Radio Relay League, The Radio Amateur's Handbook, West Hartford, Conn., April, 1961. AM-FM Broadcast Maintenance (20068). Indianapolis, Ind.: Howard W. Sams & Co., Inc. AM-FM Broadcast Operations (20066). Indianapolis, Ind.: Howard W. Sams & Co., Inc.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Based on the learning activi-s preceding, the student will pare a written or oral report the advantages and disadvan-es of two printing occupations viewed by him.	4. BOOKS Heller, Jules. Printmaking Today, Holt, 1958. Turnbull, A. T. Graphics of Communication, Holt, 1968.	4. The written or oral report will be evaluated so as to give insights into how the student feels about occupations in printing.
UNIT IV AUDIO COMMUNICATIONS	UNIT IV AUDIO COMMUNICATIONS	UNIT IV AUDIO COMMUNICATIONS
RADIO OCCUPATIONS	A. RADIO OCCUPATIONS	A. RADIO OCCUPATIONS
Using role playing techniques, simulated 30-minute pro-amming sequence will be veloped to emphasize occu-tions used in the develop-ent of a radio program. This ll include programming, wscasting, technical and lated supportive staff.	1. a. BOOKS American Radio Relay League, The Radio Amateur's Handbook, West Hartford, Conn., April, 1961. AM-FM Broadcast Maintenance (20068). Indianapolis, Ind.: Howard W. Sams & Co., Inc. AM-FM Broadcast Operations (20066). Indianapolis, Ind.: Howard W. Sams & Co., Inc.	1. a. Observation of role playing criteria may be determining if noise level of activity is of a constructive or disruptive nature, if the questions asked are sincere or to waste time, and if the general attitude of the group is that of a learning nature.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
		"Special study guide, announcer, operator, radio-telephone third class operator permit with broadcast endorsement. 1969." Cat. No. CC1. 7/4: R11/969, Supt. of Documents, Washington, D. C. Steinberg, William F. and Walter B. Ford. Electricity & Electronics, Chicago: American Technical Society. RESOURCE PERSON Local radio engineer, technician, announcer, or programmer.
	b. The student will list a five-year projection of opportunities in the broadcasting fields.	b. BOOKS Employment Outlook Radio & TV Broadcasting, Announcer, Technicians. Cat. No. L2. 3: 1650-120, Supt. of Documents, Washington, D. C. Industry Wage Survey, Communications, 1968. Cat. No. L2. 3:1662, Supt. of Documents, Washington, D.C.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	"Special study guide, announcer, operator, radio-telephone third class operator permit with broadcast endorsement. 1969." Cat. No. CC1.7/4: R11/969, Supt. of Documents, Washington, D. C. Steinberg, William F. and Walter B. Ford. Electricity & Electronics, Chicago: American Technical Society. RESOURCE PERSON Local radio engineer, technician, announcer, or programmer.	
The student will list a five-ar projection of opportuni-s in the broadcasting fields.	b. BOOKS Employment Outlook Radio & TV Broadcasting, Announcer, Technicians. Cat. No. L2.3: 1650-120, Supt. of Documents, Washington, D. C. Industry Wage Survey, Communications, 1968. Cat. No. L2.3:1662, Supt. of Documents, Washington, D.C.	b. Have student write a brief answer to the question, "Is there any noticeable trends related to occupational opportunities in the broadcast field for the near future and why or why not would you be interested in such a career?"

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
2. Given a list of jobs in broadcasting, the student should be able to write the major duties of each.	2. List the jobs available at a radio station and the student will match them to a list of duties and responsibilities required.	2. BOOKS Dictionary of Occupational Titles (Vols. I, II, and Supplement). Supt. of Documents Washington, D. C. Kaufman, Milton. Radio Operator's License Q & A Manual, N.Y.: John F. Reder Pub., Inc., 1961. FIELD TRIP Local radio station, marine operator, air controller, or police communications center.
3. The student will be able to evaluate the occupational advantages and disadvantages of the sales and service aspect of the broadcast industry.	3. a. Produce, direct, and stage a simulated one-minute commercial pertaining to sales or servicing of communication equipment. The script to be interlocked with English class involvement.	3. a. RESOURCE PERSON Wholesaler of electricity-electronic equipment or radio programmer, director, or announcer.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
List the jobs available at a dio station and the student l match them to a list of ies and responsibilities re- red.	2. BOOKS Dictionary of Occupational Titles (Vols. I, II, and Supplement). Supt. of Documents Washington, D. C. Kaufman, Milton. Radio Operator's License Q & A Manual, N.Y.: John F. Reder Pub., Inc., 1961. FIELD TRIP Local radio station, marine operator, air controller, or police communications center.	2. The list produced by the student will be viewed to see if duties and responsibilities are listed and if any interest patterns are developing.
Produce, direct, and stage simulated one-minute commercial pertaining to sales or rvicing of communication uipment. The script to be terlocked with English class volvement.	3. a. RESOURCE PERSON Wholesaler of electricity-electronic equipment or radio programmer, director, or announcer.	3. a. The student will take the topic of sales or service in the broadcast and will present a brief written or oral presentation on some advantages or disadvantages of these occupational aspects. OR The class will rate as to will or will not buy or use the commercial services and why

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	b. After school hours, visit a sales/repair store or during class have a sales/repair representative come to discuss his occupation.	b. BOOKS Employment Outlook TV & Radio Service Technician. Cat. No. L2. 3:1650-89. Supt. of Documents, Washington, D. C. Rice, Edward F. Radio Service Training Manual. Indianapolis, Ind.: Howard W. Sams & Co., Inc. Sams Editorial Staff, Color TV Training Manual. Indianapolic, Ind.: Howard W. Sams Co., Inc. RESOURCE PERSON Sales/service occupations, radio service man, or instructor from local area vocational technical school.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
		OR Question and answer period during or after resource person's presentation. Questions in part directed by the teacher.
After school hours, visit a les/repair store or during ass have a sales/repair presentative come to discuss s occupation.	b. BOOKS Employment Outlook TV & Radio Service Technician. Cat. No. L2. 3:1650-89. Supt. of Documents, Washington, D. C. Rice, Edward F. Radio Service Training Manual. Indianapolis, Ind.: Howard W. Sams & Co., Inc. Sams Editorial Staff, Color TV Training Manual. Indianapolic, Ind.: Howard W. Sams Co., Inc. RESOURCE PERSON Sales/service occupations, radio service man, or instructor from local area vocational technical school.	b. Have panel of student research and discuss the skill, educational, and environmental requirement of an occupation in sales or repair.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SU
B. TELEPHONE OCCUPATIONS	B. TELEPHONE OCCUPATIONS	B. TELEPHONE OCCUPATIONS	B.
1. The student will contrast the roles, traits, and characteristics of five (5) different occupations found in the telephone industry.	1. Lecture/Demonstration: "Communications: Prologue to Tomorrow" from Southern Bell Telephone Business Office. Field Trip: Guided building tour of local telephone company. Compile a chart of five occupations accompanied by pictures and description (individual or group planning).	1. BOOKS Dictionary of Occupational Titles (Volumes I & II and Supplement). Supt. of Documents, Washington, D. C. "Telephone industry, central office craftsman, central office equipment installers, lineman and cable splicers, telephone and PBX installers and repairmen." Cat. No. L2.3:1650-122. Supt. of Documents, Washington, D. C. "Telephone operators." Cat. No. L2.3:1650-55. Supt. of Documents, Washington, DC. FILM "The town and the Telephone" from Southern Bell Telephone Business Office. RESOURCE PERSON Local telephone business office representative.	1

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
ELEPHONE OCCUPATIONS ecture/Demonstration: Communications: Prologue Tomorrow" from Southern ll Telephone Business Office. ield Trip: uided building tour of local ephone company. ompile a chart of five occu- ions accompanied by pic- es and description (indivi- l or group planning).	B. TELEPHONE OCCUPATIONS 1. BOOKS Dictionary of Occupational Titles (Volumes I & II and Supplement). Supt. of Documents, Washington, D. C. "Telephone industry, central office craftsman, central office equipment installers, lineman and cable splicers, telephone and PBX installers and repairmen." Cat. No. L2. 3:1650-122. Supt. of Documents, Washington, D. C. "Telephone operators." Cat. No. L2. 3:1650-55. Supt. of Documents, Washington, DC. FILM "The town and the Telephone" from Southern Bell Telephone Business Office. RESOURCE PERSON Local telephone business office representative.	B. TELEPHONE OCCUPATIONS 1. Panel discussion of film or resource person. OR Require individual written report on five occupations found in the telephone industry. OR If slides taken on field trip, structure direct question and answer period during review viewing.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SU
2. The student will engage in a teacher designed simulated learning activity to acquaint himself to some of the characteristics of the occupational opportunities of the telephone industry. Representative occupations may include: (1) operator. (2) repairman-installer. (3) maintenance. (4) planning-designing-research. (5) lineman.	2. (1) Simulated learning activities such as stretching a wire between two tin cans to make a telephone; simulate an operator (telephone or radio-telephone) on to a tape recorder and play back looking for parts of the conversation for precision, clearness, accuracy, friendliness, and helpfulness; using telephone equipment obtained from local telephone company, practice procedures used in taking incoming calls, taking orders for services, or placing an order for specific parts over the phone. (2) Using instruments obtained from local telephone company, these being lineman tools, construct a simple circuit using these tools. (3) Have a local lineman demonstrate and talk about his work. (4) Have a local plant engineer talk about his job requirements. (5) Bring in a receptionist and have her discuss her duties and means of communicating.	2. RESOURCE PERSON (1) Telephone installer/ repairman. (2) Telephone local test and toll test man. (3) Telephone engineer. (4) Receptionist.	2

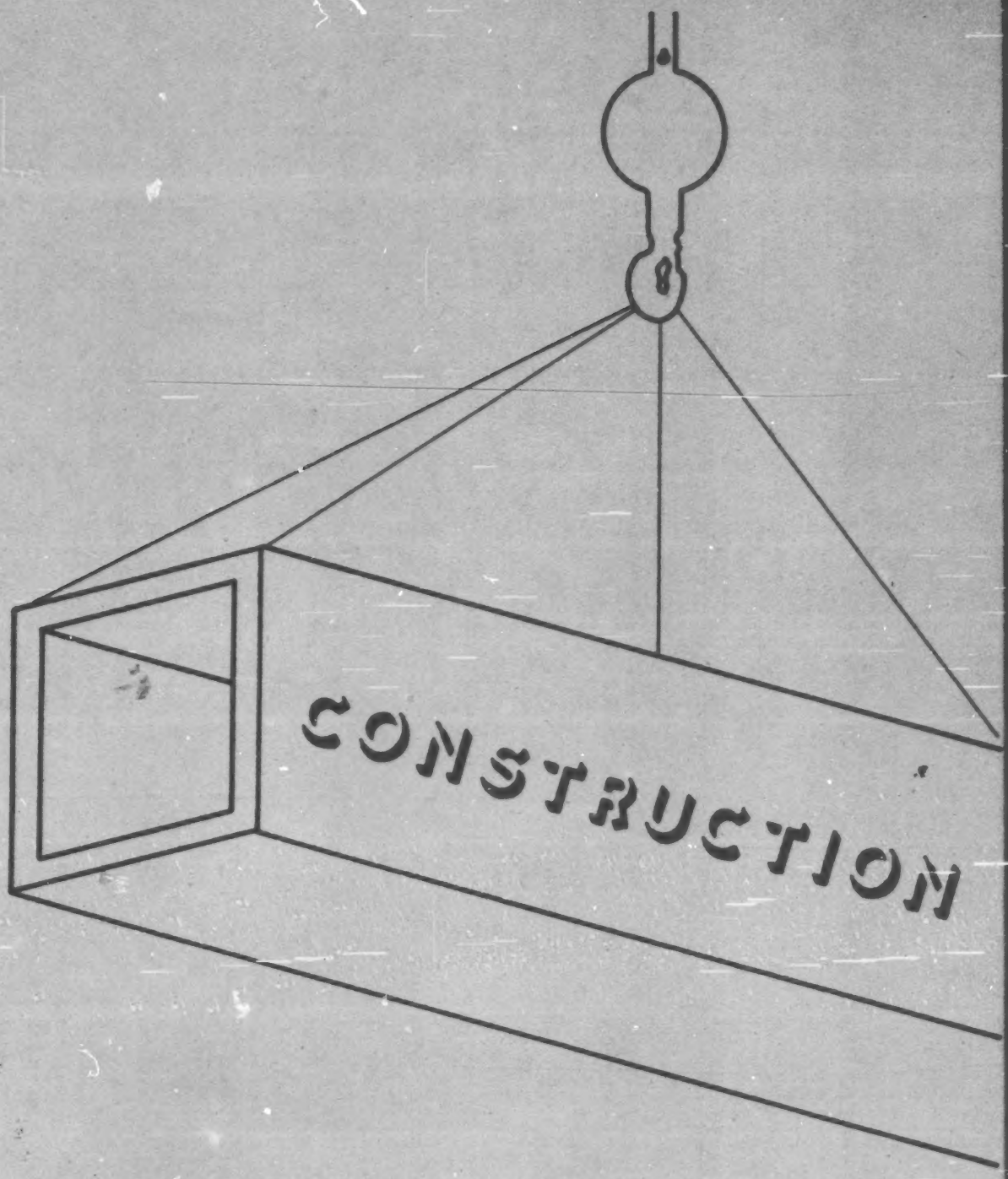
ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
) Simulated learning activi- es such as stretching a wire tween two tin cans to make a lephone; simulate an operator elephone or radio-telephone) to a tape recorder and play ck looking for parts of the nversation for precision, earness, accuracy, friendli- ss, and helpfulness; using lephone equipment obtained om local telephone company, actice procedures used in king incoming calls, taking ders for services, or plac- an order for specific parts r the phone. Using instruments obtain- from local telephone com- ny, these being lineman ls, construct a simple cuit using these tools. Have a local lineman dem- trate and talk about his rk. Have a local plant engineer k about his job requirements. Bring in a receptionist and ve her discuss her duties and ans of communicating.	2. RESOURCE PERSON (1) Telephone installer/ repairman. (2) Telephone local test and toll test man. (3) Telephone engineer. (4) Receptionist.	2. Using resource material accumulated, the student will list one occupation of choice and give examples of the following occupational requirements as to: (1) clothes or uniforms. (2) hand tools needed. (3) equipment used. (4) personal appearance. (5) physical requirements. (6) educational requirements. (7) skill requirements.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SU
UNIT V VISUAL COMMUNICATION	UNIT V VISUAL COMMUNICATION	UNIT V VISUAL COMMUNICATION	
A. TELEVISION	A. TELEVISION	A. TELEVISION	A
1. The student will be able to evaluate the advantages and requirements of various occupations found in the television industries. Representative occupations might be: (1) broadcaster. (2) engineer. (3) technician. (4) cameraman. (5) stage director.	1. a. The students will research the major jobs associated in the production of a five minute news telecast with emphasis on equipment and skills required. b. The students will produce, direct, and stage a mock-up of a newscast using constructed or simulated equipment.	1. BOOKS & REFERENCES "Educational Television the Next Ten Year, 1962." Cat. No. FS5.234:34036. Supt. of Documents, Washington, DC. "Employment Outlook: Radio & Television Broadcasting, Radio & Television Announcers, Broadcast Technicians." Cat. No. L2.3:1650-120. Supt. of Documents, Washington, D.C. "Instructional Television Facilities, A Planning Guide, 1969." Cat. No. HE5.234:34043. Supt. of Documents, Washington, D.C. "Television and Radio Service Technicians." Cat. No. L2.3 1650-89. Supt. of Documents, Washington, D.C.	1

RNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT V VISUAL OMMUNICATION ELEVISION he students will research major jobs associated in production of a five minute s telecast with emphasis equipment and skills re-red. he students will produce, ect, and stage a mock-up newscast using construct-r simulated equipment.	UNIT V VISUAL COMMUNICATION A. TELEVISION 1. BOOKS & REFERENCES "Educational Television the Next Ten Year, 1962." Cat. No. FS5.234:34036. Supt. of Documents, Washington, DC. "Employment Outlook: Radio & Television Broadcasting, Radio & Television Announcers, Broadcast Technicians." Cat. No. L2.3:1650-120. Supt. of Documents, Washington, D.C. "Instructional Television Facilities, A Planning Guide, 1969." Cat. No. HE5.234:34043. Supt. of Documents, Washington, D.C. "Television and Radio Service Technicians." Cat. No. L2.3 1650-89. Supt. of Documents, Washington, D.C.	UNIT V VISUAL COMMUNICATION A. TELEVISION 1. a. The student will provide a support data sheet containing three to five major jobs listed with the skills and educational requirements of each and some advantages or disadvantages of each occupation. b. Group discussion as to the likes and dislikes of producing, directing, and staging of a news cast. Directed questions as to the advantages and disadvantages of occupations and why or why not you would like to do this type of work.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
		"Television in Medical Teaching and Research, 1966." Cat. No. FS5.234:34040. Supt. of Documents, Washington, D. C.
B. COMMERCIAL/ MILITARY	B. COMMERCIAL/MILITARY	B. COMMERCIAL/MILITARY
1. The student will be able to evaluate the advantages and disadvantages of some specialized occupations such as commercial or military radar operator, or commercial or military sonar operator.	1. (1) Visit to local military installation or have local military or reserve personnel visit and give a talk/demonstration on communications used. (2) Visit to local commercial weather, airline, or seaport facility to see ongoing job opportunities. (3) Research commercial uses of radar and sonar in such fields as navigation, fishing, and guidance systems. (4) Visit local Area Vocational-Technical School or have representatives discuss the service aspect in such work.	1. BOOKS "Federal Plan for Weather Radars and Remote Displays, 1969." Cat. No. C52.2:W37/2/969-73. Supt. of Documents, Washington, D. C. "Introduction to Sonar. Rev. 1968." Cat. No. D208.11: SO 5/2/968. Supt. of Documents, Washington, D. C. RESOURCE PERSON Military operator, government (federal or local) operator, and local instructor or teacher of subject.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	"Television in Medical Teaching and Research, 1966." Cat. No. FS5.234:34040. Supt. of Documents, Washington, D. C.	
COMMERCIAL/MILITARY	B. COMMERCIAL/MILITARY	B. COMMERCIAL/ MILITARY
) Visit to local military in-llation or have local military reserve personnel visit and e a talk/demonstration on nmunications used.) Visit to local commercial ther, airline, or seaport ility to see ongoing job ortunities.) Research commercial uses adar and sonar in such fields navigation, fishing, and dance systems.) Visit local Area Vocational-hnical School or have rep-entatives discuss the ser-e aspect in such work.	1. BOOKS "Federal Plan for Weather Radars and Remote Displays, 1969." Cat. No. C52.2:W37/2/969-73. Supt. of Documents, Washington, D. C. "Introduction to Sonar. Rev. 1968." Cat. No. D208.11: SO 5/2/968. Supt. of Documents, Washington, D. C. RESOURCE PERSON Military operator, government (federal or local) operator, and local instructor or teacher of subject.	1. Before the field trip, develop and pass out specific questions to be answered by students during field trip experience. OR During resource person's presentation have specific questions handed out so that answers may be gotten by the students on related questions pertaining to the occupations discussed.


CONSTRUCTION

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT I CONSTRUCTION	UNIT I CONSTRUCTION	UNIT I CONSTRUCTION	
A. INTRODUCTION	A. INTRODUCTION	A. INTRODUCTION	A
1. The student will develop broad concepts of the different careers in the field of construction.	1. a. Instructor will offer a working definition of construction so as to establish a vocabulary for further communication. b. The instructor will discuss with the students the broad aspects of the construction fields in order for them to determine the different occupational careers in the field of construction. c. Have resource persons from residential and commercial construction firms visit the class and present a general orientation of their respective fields; to include but not limited to: (1) careers and career patterns (2) pay scales (3) fringe benefits (4) general work schedule (5) general types of workers needed	1. a. Instructor designed transparency. b. Instructor designed collage showing major and unique occupational examples. c. Resource personnel to conduct orientation of commercial construction. Resource personnel to conduct orientation of residential construction. Teacher designed form to allow space for pre-determined listing of data pertinent to an orientation to representative construction careers.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT I ONSTRUCTION	UNIT I CONSTRUCTION	UNIT I CONSTRUCTION
NTRODUCTION	A. INTRODUCTION	A. INTRODUCTION
Instructor will offer a work- g definition of construction as to establish a vocabulary r further communication. The instructor will discuss th the students the broad as- cts of the construction fields order for them to determine e different occupational ca- ers in the field of construc- on. Have resource persons from sidential and commercial nstruction firms visit the ass and present a general ientation of their respective lds; to include but not nited to:) careers and career patterns) pay scales) fringe benefits) general work schedule) general types of workers eded	1. a. Instructor designed transparency. b. Instructor designed collage showing major and unique occupational examples. c. Resource personnel to conduct orientation of commercial construction. Resource personnel to conduct orientation of residential construction. Teacher designed form to allow space for pre-determined listing of data pertinent to an orientation to representative construction careers.	1. a. Oral questioning from instructor. b. Responses of students during presentation--ie questions asked, attention or lack of it, instructor directed questions, etc. c. Spot checking of responses on the hand-out or panel discussion of information gathered.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	(6) general characteristics of workers (physical and mental demands) (7) general working conditions (8) health hazards and life span prognosis (9) employment outlook (10) training, other qualifications and advancement (11) general educational requirements for entry Students will fill in appropriate slots on a data sheet previously supplied by the instructor.		
	d. Use of film to stimulate discussion.	d. 16mm film #7346 (The Construction Worker) 16mm film #1901 (Careers in the Building Trades) (Note: Films are State (Ga.) Library Numbers.)	
2. Develop concepts which will enable the	2. a. By classroom discussion,	2. Utilization of construction ongoing in the community, such	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
6) general characteristics of orkers (physical and mental emands) 7) general working conditions 8) health hazards and life span rognosis 9) employment outlook 0) training, other qualifica-ions and advancement 1) general educational re-uirements for entry Students will fill in appropriate slots on a data sheet reviously supplied by the instructor.		
. Use of film to stimulate iscussion.	d. 16mm film #7346 (The Construction Worker) 16mm film #1901 (Careers in the Building Trades) (Note: Films are State (Ga.) Library Numbers.)	d. Having previewed the film, develop a specific set of questions that the answers can be gained from viewing the film. Pass these sheets out a few minutes before viewing the film; collect following the film; have brief period of time for answering.
By classroom discussion,	2. Utilization of construction ongoing in the community, such	2. As a group activity, divide the class into

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
student to distinguish between the broad categories of construction.	begin to define construction by referring to types of construction seen in the community. b. Based on existing construction going on in the community: (1) plan a field trip to an ongoing development and take slides of workers in their working conditions; OR (2) Assign each student the task of identifying and listing as many as possible types of construction jobs seen as he engages in an outside assignment of visiting community construction sites.	as residential, commercial, industrial, highways, institutional, bridge, pipelines, electrical transmission lines, etc.	
3. The student will write a brief, concise definition of the term "construction" and will identify a specific career or job possibility in construction. On this job, he will briefly discuss in a written form the appropriate percentage of this type of worker found in construction; indicate the pay scale	3. Development of a one or two page written report containing the information requested in the objective.	3. MATERIALS SRA Widening Occupational Roles Kit. Science Research Associates, Inc., Chicago, Ill. REFERENCES Dictionary of Occupational Titles (Vols. I, II & Supplement), Supt. of Documents, Washington, D. C.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
egin to define construction by eferring to types of construc- ion seen in the community. Based on existing construc- ion going on in the community: 1) plan a field trip to an on- going development and take slides of workers in their working conditions; OR 2) Assign each student the ask of identifying and listing s many as possible types of construction jobs seen as he ngages in an outside assign- ment of visiting community construction sites.	as residential, commercial, industrial, highways, insti- tutional, bridge, pipelines, electrical transmission lines, etc.	segments and have them list as a group as many occupations recognized as possible in the com- munity. OR Individually collect list of jobs. OR Panel discussion con- cerning slides.
Development of a one or two e written report containing information requested in objective.	3. MATERIALS SRA Widening Occupational Roles Kit. Science Research Associates, Inc., Chicago, Ill. REFERENCES Dictionary of Occupational Titles (Vols. I, II & Supple- ment), Supt. of Documents, Washington, D. C.	3. Interlocking evalua- tion by communication skills instructor and Industrial Arts instruc- tor on the paper content.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
involved; indicate any health hazards; and, discuss any educational or skill requirements necessary.		Occupational Outlook Handbook 1970-71 ed. Cat. No. L2.3: 1650, Supt. of Documents, Washington, D.C. RESOURCE PEOPLE Previous resource people and data sheets used in above sections or on site after school interview.	
4. The student will be introduced to some of the perhaps lesser known occupations that are closely related to construction practices.	4. Individual or group development of a chart or collage showing some supportative occupations to the construction industry. These may include: real estate, attorney, recorder of deeds, contractor, model builders, etc.	4. REFERENCES Elevator Constructor. Cat. No. L2.3:1650-74, Supt. of Documents, Washington, D.C. Employment Outlook, Models. Cat. No. L2.3:1650-38, Supt. of Documents, Washington, D.C. Real Estate Salesman and Broker. Cat. No. L2.3:1650-59, Supt. of Documents, Washington, D.C. RESOURCE PEOPLE On-site visitation or invite person(s) to discuss occupations.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Occupational Outlook Handbook 1970-71 ed. Cat. No. L2.3: 1650, Supt. of Documents, Washington, D.C. RESOURCE PEOPLE Previous resource people and data sheets used in above sections or on site after school interview.	
Individual or group develop-nt of a chart or collage show- some supportative occupa-ns to the construction indus-. These may include: real ate, attorney, recorder of ds, contractor, model build-, etc.	4. REFERENCES Elevator Constructor. Cat. No. L2.3:1650-74, Supt. of Documents, Washington, D.C. Employment Outlook, Models. Cat. No. L2.3:1650-38, Supt. of Documents, Washington, D.C. Real Estate Salesman and Broker. Cat. No. L2.3:1650-59, Supt. of Documents, Washington, D.C. RESOURCE PEOPLE On-site visitation or invite person(s) to discuss occupations.	4. Peer group evaluation of chart of collage.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
5. The student will write an overview of his expectations of the construction trades.	5. Brief written descriptive overview of some projected pros and/or cons as he perceives them in a job of his identification.	5. All previous sources.
UNIT II CONSTRUCTION OCCUPATIONS	UNIT II CONSTRUCTION OCCUPATIONS	UNIT II CONSTRUCTION OCCUPATIONS
A. GENERAL OBJECTIVES	A. GENERAL OBJECTIVES (Examples of activities to meet general objectives)	A. GENERAL OBJECTIVES
1. The student will be able to differentiate occupations found in construction into the following suggested areas: a. be able to contrast and compare construction occupations by specific title(s); b. be able to formulate concepts of various employment opportunities in construction fields;	1. Develop hand-on laboratory exercises which will give the student a "feeling of the type work that he will be doing if he selects X career to explore in depth." Try to simulate the actual setting as much as possible. (NOTE: Refer to Units III A & B for more specific examples.) 2. Use mock-up or sandbox activities whenever appropriate to demonstrate a concept, use as a point of reference, or to establish continuity of concepts. (NOTE: Refer to Units III A & B for more specific examples.)	REFERENCES From the Superintendent of Documents, Washington, D. C. 20402: Dictionary of Occupational Titles, Vol. 1, Cat. No. L7. 2"Oc1/965/v. 1. Dictionary of Occupational Titles, Vol. 2. Cat. No. L7. 2:Oc1/965/v. 2. _____ Supplement to above Cat. No. L. 7. 1:Oc1/965/ Supp. 2.

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Brief written descriptive overew of some projected pros and/ cons as he perceives them in job of his identification.	5. All previous sources.	5. At this point, this paper will serve as a possible pre-evaluation entry to be judged later for student insights into occupational characteristics.
UNIT II CONSTRUCTION OCCUPATIONS	UNIT II CONSTRUCTION OCCUPATIONS	UNIT II CONSTRUCTION OCCUPATIONS
GENERAL OBJECTIVES xamples of activities to meet neral objectives)	A. GENERAL OBJECTIVES	A. GENERAL OBJECTIVES
Develop hand-on laboratory ercises which will give the dent a "feeling of the type rk that he will be doing if he lects X career to explore in pth." Try to simulate the tual setting as much as possible. (NOTE: Refer to Units A & B for more specific mples.)	REFERENCES From the Superintendent of Documents, Washington, D.C. 20402: Dictionary of Occupational Titles, Vol. 1, Cat. No. L7. 2"Oc1/965/v. 1. Dictionary of Occupational Titles, Vol. 2. Cat. No. L7. 2:Oc1/965/v. 2. _____ Supplement to above Cat. No. L. 7. 1:Oc1/965/ Supp. 2.	Teacher-made tests to evaluate student's understanding of: a. educational requirements for specific job entry. b. training or educational requirements for advancement in chosen career groups. c. employment opportunities in the residential construction fields.
Use mock-up or sandbox tivities whenever appropriate to monstrate a concept, use as a nt of reference, or to estabh continuity of concepts. OTE: Refer to Units III A & B more specific examples.)		

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
c. be able to identify skill(s) requirements, such as: (1) job entry level requirements; (2) updating levels available; and, (3) skill(s) level(s) for advancement; d. be able to identify educational requirements such as: (1) job entry level requirements; (2) updating educational levels; and, (3) educational levels for advancement; e. be able to identify and differentiate setting attributes as factors in choosing an occupation, such as: (1) group size and dynamics in the work setting; (2) indoor vs. outdoor conditions; (3) working location such as	3. If facilities exist, have the students in class groups go through the process of planning and building a small building 8' x 10' to be used for storage on the school property. An alternate will be to design the structure in movable sections so as to be movable and perhaps sold to interested people. Some examples of occupational involvement in the process may be as follows: a. Planners: (1) Architect (2) Estimators b. Site preparation: (1)* Bulldozer Oper's. (2)* Backhoe and Frontend Loader Oper's. * (Simulated) (3) Truck drivers (4) Construction Laborers (Pick and Shovel people) c. Structure layout: (1) Surveyor or chief of party (2) Recorder (3) Instrument Oper's. (4) Axemen (5) Chainmen d. Foundation: (1) Backhoe operator	Occupational Outlook Handbook, 1970-71 Edition. Cat. No. L2. 3:1650. _____ Complete set of reprints from above. Cat. No. L2. 3: 1650A and 1650-1-1650-128. _____ Employment Outlook, Tomorrow's Jobs, 1970. Cat. No. L2. 3:1650-1. Reprints from the Occupational Outlook Handbook. "Aluminum Industry" L2. 3: 1650-109. "Architect" L2. 3:1650-28. "Asbestos and Insulating Worker" L2. 3:1650-68. "Carpenters" L2. 3:1650-70. "Draftsman" L2. 3:1650-27. "Electricians (construction)" L2. 3:1650-73. "Floor Covering Installers" L2. 3:1650-75. "Heating" L2. 3:1650-80. "Laborer" L2. 3:1650-72. "Masonry" L2. 3:1650-69. "Roofers, Sheet-Metal Workers" L2. 3:1650-78. "Welders, Oxygen and Arc Cutters" L2. 3:1650-105.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
f facilities exist, have the dents in class groups go ough the process of planning building a small building 10' to be used for storage on school property. An alter- e will be to design the struc- e in movable sections so as e movable and perhaps sold nterested people. Some examples of occupa- al involvement in the process be as follows: Planners: (1) Architect (2) Estimators Site preparation: (1)* Bulldozer Oper's. (2)* Backhoe and Frontend Loader Oper's. * (Simulated) (3) Truck drivers (4) Construction Laborers (Pick and Shovel people) Structure layout: (1) Surveyor or chief of party (2) Recorder (3) Instrument Oper's. (4) Axemen (5) Chainmen Foundation: (1) Backhoe operator	Occupational Outlook Handbook, 1970-71 Edition. Cat. No. L2.3:1650. _____ Complete set of reprints from above. Cat. No. L2.3: 1650A and 1650-1-1650-128. _____ Employment Outlook, Tomorrow's Jobs, 1970. Cat. No. L2.3:1650-1. Reprints from the Occupational Outlook Handbook. "Aluminum Industry" L2.3: 1650-109. "Architect" L2.3:1650-28. "Asbestos and Insulating Worker" L2.3:1650-68. "Carpenters" L2.3:1650-70. "Draftsman" L2.3:1650-27. "Electricians (construction)" L2.3:1650-73. "Floor Covering Installers" L2.3:1650-75. "Heating" L2.3:1650-80. "Laborer" L2.3:1650-72. "Masonry" L2.3:1650-69. "Roofers, Sheet-Metal Workers" L2.3:1650-78. "Welders, Oxygen and Arc Cutters" L2.3:1650-105.	OR Peer group, group, or interlocking evaluation of a student written report dealing with specifics of the general objectives in light of a particular job or career ladder. OR Teacher made matching exercises to relate occupations and their characteristics. OR The teacher will conduct oral examination to ascertain student's concepts of the two major divisions of the construction industry. OR Students will write an overview of individual expectations of the construction industry. (NOTE: This may be used as a pre-course diagnostic evaluation.)

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
ground level or elevated; mobile or fixed; urban or rural; (4) working hours and salaries; (5) responsibilities; and, (6) possible hazards. f. be able to list considerations based on personal attributes that could include: (1) social acceptability; (2) physical requirements; (3) psychological considerations such as noise level, sanitation, challenging aspect, religion, language of co-workers, etc.	(2) Laborers-pick & shovel concrete helpers carpenter helpers (3) Concrete finishers (4) Carpenters, gen. (5) Rod setters (when architect specifies use of rods in the foundation) e. Masonry: (1) Bricklayer/mason (2) Stone mason (3) Block mason (4) Helpers (5) Hod Carriers f. Plumbing: (1) Plumbing engineer (2) Systems designers (3) Plumbers (4) Pipe fitters (5) Backhoe & trencher operators (6) General laborers g. Electrical: (1) Engineers (2) Electricians: (a) Linesmen (b) Wiremen h. Heat & Air Conditioning: (1) Engineers (2) Sheet metal workers (3) Plumbers (4) Electricians	"Painters and Paperhangers" L2. 3:1650-70. "Plasterers" L2. 3:1650-71. "Plumber and Pipefitter" L2. 3:1650-77. "Real Estate Salesman and Broker" L2. 3:1650-59. "Refrigeration" L2. 3:1650-80. "Roofer L2. 3:1650-78. "Surveyor" L2. 3:1650-46. "Urban Planner" L2. 3:1650-48.

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
(2) Laborers-pick & shovel concrete helpers carpenter helpers (3) Concrete finishers (4) Carpenters, gen. (5) Rod setters (when architect specifies use of rods in the foundation) Masonry: (1) Bricklayer/mason (2) Stone mason (3) Block mason (4) Helpers (5) Hod Carriers Plumbing: (1) Plumbing engineer (2) Systems designers (3) Plumbers (4) Pipe fitters (5) Backhoe & trencher operators (6) General laborers Electrical: (1) Engineers (2) Electricians: (a) Linesmen (b) Wiremen Heat & Air Conditioning: (1) Engineers (2) Sheet metal workers (3) Plumbers (4) Electricians	"Painters and Paperhangers" L2. 3:1650-70. "Plasterers" L2. 3:1650-71. "Plumber and Pipefitter" L2. 3:1650-77. "Real Estate Salesman and Broker" L2. 3:1650-59. "Refrigeration" L2. 3:1650-80. "Roofer L2. 3:1650-78. "Surveyor" L2. 3:1650-46. "Urban Planner" L2. 3:1650-48.	OR Teacher-made tests to evaluate student's understanding of: a. Setting attributes as to group size and dynamics in work settings; indoor vs. outdoor conditions; working hours and other characteristics of the occupation. b. Different factors involved in choosing an occupation. c. The personal attributes to consider in choosing an occupation. d. The occupational choice factors which must be considered in choosing an occupation.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	i. Roofing & Flashing: (1) Roofer (2) Metal worker j. Guttering & Downspout: (1) Gutter installer (2) Metal worker k. Flooring: (1) Resilient (2) Ceramic (3) Carpeting (4) Wood l. Finishing & Cabinet Work: (1) Finishing Carpenter or Trimmer (2) Cabinetmaker m. Painting and Decorating: (1) Interior Decorator (2) Painter n. Tile (Ceiling & Wall) (1) Installer o. Landscaping: (1) Landscape architect (2) Nursery Operator (3) Tractor Driver (4) Grader Operator (5) Truck Driver (6) Laborer 4. Have students select from the list of representative jobs found above or elected on his own, one or more jobs to be researched in light of the general objectives given.		

CARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Roofing & Flashing: (1) Roofer (2) Metal worker Guttering & Downspout: (1) Gutter installer (2) Metal worker Flooring: (1) Resilient (2) Ceramic (3) Carpeting (4) Wood Finishing & Cabinet Work: (1) Finishing Carpenter or Trimmer (2) Cabinetmaker Painting and Decorating: (1) Interior Decorator (2) Painter Tile (Ceiling & Wall) (1) Installer Landscaping: (1) Landscape architect (2) Nursery Operator (3) Tractor Driver (4) Grader Operator (5) Truck Driver (6) Laborer Have students select from the of representative jobs found ve or elected on his own, one more jobs to be researched in ht of the general objectives ven.		

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
B. PROJECTED OVERVIEW	B. PROJECTED OVERVIEW	B. PROJECTED OVERVIEW	
1. The student will be able to identify and list factors that have and will influence the growth of construction (such as tradition and purpose).	1. a. Develop information sheets or research data sheets for student use in library work.	REFERENCES Encyclopedia of Careers and Vocational Guidance, Vols. I & II. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. RESOURCE PERSONNEL Social Studies instructor. Science instructors.	
	b. Class project to trace some traditional practices and purposes that have influenced the growth of construction. (Technological advancement may be emphasized.)	ORGANIZATIONAL GROUPS (Note: These addresses are of national locations. Locally, representatives are perhaps present. The national organizations generally can only supply how to contact local representatives if you have difficulty.) United Brotherhood of Carpenters and Joiners of America, 101 Constitution Ave. NW, Washington, D. C. 20001.	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
PROJECTED OVERVIEW	B. PROJECTED OVERVIEW	B. PROJECTED OVERVIEW
Develop information sheets r research data sheets for tudent use in library work.	REFERENCES Encyclopedia of Careers and Vocational Guidance, Vols. I & II. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. RESOURCE PERSONNEL Social Studies instructor. Science instructors.	Checking of individual worksheet or contract to determine degree of student exploration into specified area. OR Teacher evaluation of students through quiz during discussion.
Class project to trace some raditional practices and purposes that have influenced the rowth of construction. (Technological advancement may be mphasized.)	ORGANIZATIONAL GROUPS (Note: These addresses are of national locations. Locally, representatives are perhaps present. The national organizations generally can only supply how to contact local representatives if you have difficulty.) United Brotherhood of Carpenters and Joiners of America, 101 Constitution Ave., NW, Washington, D. C. 20001.	OR Use teacher prepared test to evaluate students' understanding of the progression possibilities in construction careers.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. List future economic outlook for construction based on some variables such as: a. ecology; b. leisure time; c. possible income; d. automation and cybernetics.	2. Following assignment to researcher, a time period for role playing to place emphasis on the objective listing of factors that may have an impact on construction practices. Let one student be a prospective buyer for a new construction, one be a contractor, and one represent labor.	Associated General Contractors of America, Inc., 1957 E Street, NW, Washington, D.C. 20006. Bricklayers, Masons, and Plasters' International Union of America, 815 15th Street, NW, Washington, D.C. 20005. Operative Plasters and Cement Masons' International Ass'n. of U.S. & Canada, 1125 17th Street, NW, Washington, D.C. 20036. International Brotherhood of Electrical Workers, 1200 15th Street, NW, Washington, D.C. 20005.	
3. List present employment possibilities, and be able to identify agencies and educational materials available for job entry and advancement.	3. a. Ask Guidance Counselor to talk to students about career planning. b. Discussions with students of the various aspects of career planning and occupational guidance. Slant toward the discussion of particular jobs. c. Invite resource personnel who represent the respective career groups and ask them to give the students an orientation.	National Electrical Contractors Ass'n., 1220 18th Street, NW, Washington, D.C. 20036. Architecture and Draftsman's Union, International Federation of Technical Engineers, 900 F Street, NW, Washington, D.C. 20004. National Joint Apprenticeship and Training Committee on Elec. Industry, 1200 18th St., NW, Washington, D.C. 20036. American Carpet Institute, Empire State Building, New York, New York 10001.	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Following assignment to researcher, a time period for role playing to place emphasis on the objective listing of factors that may have an impact on construction practices. Let the student be a prospective buyer for a new construction, one be a contractor, and one represent labor. Ask Guidance Counselor to talk to students about career planning. Discussions with students of the various aspects of career planning and occupational guidance. Slant toward the discussion of particular jobs. Invite resource personnel who represent the respective career groups and ask them to give the students an orientation.	Associated General Contractors of America, Inc., 1957 E Street, NW, Washington, D.C. 20006. Bricklayers, Masons, and Plasters' International Union of America, 815 15th Street, NW, Washington, D.C. 20005. Operative Plasters and Cement Masons' International Ass'n. of U.S. & Canada, 1125 17th Street, NW, Washington, D.C. 20036. International Brotherhood of Electrical Workers, 1200 15th Street, NW, Washington, D.C. 20005. National Electrical Contractors Ass'n., 1220 18th Street, NW, Washington, D.C. 20036. Architecture and Draftsman's Union, International Federation of Technical Engineers, 900 F Street, NW, Washington, D.C. 20004. National Joint Apprenticeship and Training Committee on Elec. Industry, 1200 18th St., NW, Washington, D.C. 20036. American Carpet Institute, Empire State Building, New York, New York 10001.	OR Student essays on subjects: a. What are the factors which forecast economic outlook; and/or b. What skill acquisitions are necessary for future employment; and/or c. What resources are available to aid in entry or advancement in an occupation; and/or d. Present employment possibilities in choice occupation.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		Armstrong Cork Co., Lancaster, Pa., 17600. Congoleum-Nairn, Inc., 195 Belgrove Dr., Kearny, N.J. 07032. Brotherhood of Painters, Decorators and Paperhangers of America, 217-219 N. Sixth Street, Lafayette, Ind. 47901. Tile Contractors Ass'n. of America, 1420 New York Ave., Washington, D.C. 20005. International Union of Operating Engineers, 1123 17th St., NW, Washington, D.C. 20036. Painting and Decorating Contractors of America, 2625 West Peterson Ave., Chicago, Ill. 60605. American Congress of Surveying and Mapping, Woodward Building, Washington, D.C. 20005. International Hod Carrier's Bldg. and Common Laborers' Union of America, 905 16th Street, NW, Washington, D.C. 20006. American Society of Landscape Architects, Inc., 200 K Street, NW, Washington, D.C. 20006.	

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Armstrong Cork Co., Lancaster, Pa., 17600. Congoleum-Nairn, Inc., 195 Belgrove Dr., Kearny, N. J. 07032. Brotherhood of Painters, Decorators and Paperhangers of America, 217-219 N. Sixth Street, Lafayette, Ind. 47901. Tile Contractors Ass'n. of America, 1420 New York Ave., Washington, D. C. 20005. International Union of Operating Engineers, 1123 17th St., NW, Washington, D. C. 20036. Painting and Decorating Contractors of America, 2625 West Peterson Ave., Chicago, Ill. 60605. American Congress of Surveying and Mapping, Woodward Building, Washington, D. C. 20005. International Hod Carrier's Bldg. and Common Laborers' Union of America, 905 16th Street, NW, Washington, D. C. 20006. American Society of Landscape Architects, Inc., 200 K Street, NW, Washington, D. C. 20006.	

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		The American Institute of Architects, 1735 New York Avenue, NW, Washington, D.C. 20006. FILM "Building a House" 16mm. #383 State film library. FILMSTRIP "The World of Construction" #A01-6001; McKnight & McKnight Pub. Co., Bloomington, Illinois. RESOURCE PERSONNEL a. Residential contractor b. Commercial or general contractor c. County surveyor d. School maintenance director e. Skilled/semiskilled workers f. Professional in the field TEACHER-DEVELOPED MATERIALS a. Descriptive transparencies	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	The American Institute of Architects, 1735 New York Avenue, NW, Washington, D.C. 20006. FILM "Building a House" 16mm. #383 State film library. FILMSTRIP "The World of Construction" #A01-6001; McKnight & McKnight Pub. Co., Bloomington, Illinois. RESOURCE PERSONNEL a. Residential contractor b. Commercial or general contractor c. County surveyor d. School maintenance director e. Skilled/semiskilled workers f. Professional in the field TEACHER-DEVELOPED MATERIALS a. Descriptive transparencies	

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		b. Slide series to cover various careers in the construction field c. Locally recorded (on site) tape cassettes which reflect sounds of local construction and also could contain occupational information.	
C. INTERNALIZED OBJECTIVES 1. The student will be able to describe in writing (or orally) factors that are pro and con in his perceived relationship to selected occupations based on: a. job educational requirements; b. job skill requirements; c. setting attributes; d. personal attributes.	C. INTERNALIZED OBJECTIVES The student will write or discuss orally an overview of his initial expectations fulfillment or disappointments of career choice in the construction field.	C. INTERNALIZED OBJECTIVES (All previous references.) BOOKLETS (From Supt. of Documents, Washington, D.C. 20402): "Do You Want a Job?, 1969" L1.2:J57/4. "Education and Jobs" (a series of pamphlets) L2.2:Ed8/2. (Pamphlets separately) ____ "Jobs for which apprenticeship training is available" L2.2:J57/6.	C

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	b. Slide series to cover various careers in the construction field c. Locally recorded (on site) tape cassettes which reflect sounds of local construction and also could contain occupational information.	
NTERNALIZED OBJECTIVES	C. INTERNALIZED OBJECTIVES	C. INTERNALIZED OBJECTIVES
The student will write or dis- s orally an overview of his ial expectations fulfillment disappointments of career ice in the construction field.	(All previous references.) BOOKLETS (From Supt. of Documents, Washington, D. C. 20402): "Do You Want a Job?, 1969" L1. 2:J57/4. "Education and Jobs" (a series of pamphlets) L2. 2:Ed8/2. (Pamphlets separately) ____ "Jobs for which apprenticeship training is available" L2. 2:J57/6.	Interlocking evaluation of paper on a content basis.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. The student will be able to list factors that would aid him in decision making as related to job entry and/or advancement.	Student essay: "Why I Decided to Explore in Depth Occupation 'X' as my Primary Career of Interest."	_____ "Jobs for which high school education is usually required" L2.2:J57/5. _____ "Jobs for which high school education is generally required" L2.2:J57/3. _____ "Jobs for which a high school education is preferred but not essential" L2.2:J57/2. _____ "Jobs for which junior college, technical institute, or other specialized training is usually required" L2.2:J57/4. "Getting hired, getting trained, a study of industry practices and policies on youth employment." FS14.2:H61.	
UNIT III CONSTRUCTION ACTIVITIES	UNIT III CONSTRUCTION ACTIVITIES	UNIT III CONSTRUCTION ACTIVITIES	
A. INDIVIDUAL EXAMPLES OF PROCEDURES	A. INDIVIDUAL EXAMPLES OF PROCEDURES	A. INDIVIDUAL EXAMPLES OF PROCEDURES	A
1. The student will be exposed to a laboratory experience so that he or she will be able to identify specific physical demands, working	1. The student will lay out, square and plumb a 20" x 24" hollow brick pier 5 courses high using 9 bricks per course; mortar may or may not be used. If physically possible, activity will be performed out of doors.	1. BOOKS Dictionary of Occupational Titles. Volumes I, II, and Supplement. Supt. of Documents, Washington, D.C.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Student essay: "Why I Decided Explore in Depth Occupation as my Primary Career of rest."	_____ "Jobs for which high school education is usually required" L2.2:J57/5. _____ "Jobs for which high school education is generally required" L2.2:J57/3. _____ "Jobs for which a high school education is preferred but not essential" L2.2:J57/2. _____ "Jobs for which junior college, technical institute, or other specialized training is usually required" L2.2:J57/4. "Getting hired, getting trained, a study of industry practices and policies on youth employment." FS14.2:H61.	OR Panel discussion following presentation. OR Collage of factors involved in exploration of an occupation.
UNIT III CONSTRUCTION ACTIVITIES	UNIT III CONSTRUCTION ACTIVITIES	UNIT III CONSTRUCTION ACTIVITIES
NDIVIDUAL EXAMPLES OF ROCEDURES	A. INDIVIDUAL EXAMPLES OF PROCEDURES	A. INDIVIDUAL EXAMPLES OF PROCEDURES
he student will lay out, re and plumb a 20" x 24" w brick pier 5 courses high 9 bricks per course; mor- nay or may not be used. If ically possible, activity be performed out of doors.	1. BOOKS Dictionary of Occupational Titles. Volumes I, II, and Supplement. Supt. of Documents, Washington, D. C.	1. a. The layout of the brick pier will be checked for accuracy on a predetermined scale.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
conditions, and training time required for the job of a bricklayer (861.381).	The use of the D.O.T. will be utilized to identify worker traits.	Lux, Donald G. and Willis E. Ray, Co-Directors. The World of Construction, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1970, pp. 249-254. Parker, Harry and Others. Materials and Methods of Architectural Construction, N.Y.: John Wiley and Sons, Inc., 1961, pp. 68-88. EQUIPMENT & SUPPLIES Gauge stick, 45 brick, short level, plumb rule, and mortar (optional).	
2. Materials computation is an important activity of the construction worker (869-889), the construction carpenter (860-381), and the cabinetmaker (660-280). This activity shows one way to compute how much lumber there is in a board without having to work	2. The student will: a. construct the board foot calculator chart using the instructor model. b. use the nomograph to compute the amount of material in a set of given boards. c. record the amounts on a data sheet. d. compute the board-foot amount using conventional formula methods.	2. BOOKS Brown, Walter C. Modern General Shop, Homewood, Ill.: Goodheart-Willcox, 1970 pp. 11-12. Donnelly, Hammond and Others. Woodworking Technology, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1970, p. 31.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
use of the D.O.T. will be ized to identify worker traits.	Lux, Donald G. and Willis E. Ray, Co-Directors. The World of Construction, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1970, pp. 249-254. Parker, Harry and Others. Materials and Methods of Architectural Construction, N.Y.: John Wiley and Sons, Inc., 1961, pp. 68-88. EQUIPMENT & SUPPLIES Gauge stick, 45 brick, short level, plumb rule, and mortar (optional).	b. A written or oral question period will be used to find out how the student felt about the physical, mental, and social acceptance related to bricklaying. A discussion will also be held as to the training requirements of a bricklayer.
The student will: construct the board foot lculator chart using the in-ructor model. use the nomograph to com-te the amount of material a set of given boards. record the amounts on a ta sheet. compute the board-foot ount using conventional rmula methods.	2. BOOKS Brown, Walter C. Modern General Shop, Homewood, Ill.: Goodheart-Willcox, 1970 pp. 11-12. Donnelly, Hammond and Others. Woodworking Technology, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1970, p. 31.	2. Comparison and discussion of recorded results.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
it out mathematically. A check-up using math will also be utilized.	e. record the amount on a data sheet.	Wagner, Willis H. Modern Woodworking, Homewood, Ill.: Goodheart-Willcox, 1970 p. 27.	
3. The student will be exposed to and involved in a laboratory exercise so that he or she will be able to identify tools and some worker traits utilized by an electrician (821.381).	3. The activity will be handled inside the laboratory. a. Sketch simple circuits for a light, door bell and receptacle; b. Develop an equipment list of supplies and tools necessary to construct the circuits. c. Construction of simple circuits consisting of: (1) a light circuit; (2) a wall receptacle circuit; (3) a door bell circuit.	3. BOOKS Dictionary of Occupational Titles, Vol. 1, 2nd ed. Supt. of Documents, Washington, D.C. Graham, Kennard C. Interior Electrical Wiring. Chicago: American Technical Society, 1969, pp. 55-79. SUPPLIES As necessary: (1) bell & bell transformer (2) wire (14 gauge) (3) bulb & socket & box (4) outlet & box (5) hand tools (cutters, needlenose, etc.)	
4. This activity will assist the student in the identification and use of hand tools used by a finish carpenter.	4. Upon reading the assigned references, the student will: a. identify by name specific hand tools as represented on a handout or displayed.	4. BOOKS Groneman, Chris H. & John L. Feirer, General Shop. N.Y.: McGraw-Hill, 1963, pp. 79-127.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
record the amount on a data heet.	Wagner, Willis H. Modern Woodworking, Homewood, Ill.: Goodheart-Willcox, 1970 p. 27.	
The activity will be handled ide the laboratory. Sketch simple circuits for a ght, door bell and receptacle; Develop an equipment list of upplies and tools necessary construct the circuits. Construction of simple cir-uits consisting of:) a light circuit;) a wall receptacle circuit;) a door bell circuit.	3. BOOKS Dictionary of Occupational Titles, Vol. 1, 2nd ed. Supt. of Documents, Washington, D. C. Graham, Kennard C. Interior Electrical Wiring. Chicago: American Technical Society, 1969, pp. 55-79. SUPPLIES As necessary: (1) bell & bell transformer (2) wire (14 gauge) (3) bulb & socket & box (4) outlet & box (5) hand tools (cutters, needle-nose, etc.)	3. a. The layout of the diagram or sketch will be checked for accuracy. b. The equipment list will be checked for completeness. c. The circuits must operate safely. d. Each student will be required to relate the requirements as well as the training necessary for the performance of the duties of an electrician.
Upon reading the assigned erences, the student will: identify by name specific nd tools as represented on handout or displayed.	4. BOOKS Groneman, Chris H. & John L. Feirer, General Shop. N. Y.: McGraw-Hill, 1963, pp. 79-127.	4. Accuracy of identification of: a. tools.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	b. on a separate piece of paper briefly explain how each is used in the finishing phase of constructing a kitchen in any modern house or apartment. c. identify the selection of electric portable hand tools and explain how these are used safely in the installation of plywood paneling in a family room.	Lux, Donald G. & Willis E. Ray, Co-Directors. The World of Construction, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1970, pp. 505-514. Wagner, Willis H. Woodworking, Homewood, Ill.: Goodheart-Willcox Co., 1968, pp. 29-45. ____. Modern Woodworking, Goodheart-Willcox, Inc., 1970, pp. 2-1 to 2-16; 3-1 to 3-11; 4-1 to 4-10.	
5. One phase of the work of an architect (149.281) includes the concept of measurement. The student will be exposed to the use of an architect scale in the drawing of and reading of lines of varying lengths to an accuracy of 1/16".	5. The student will: a. be exposed and use the various scales found on an architect scale. b. by using drafting equipment available, draw various lines to pre-determined lengths given by the instructor. c. measure and record dimensions of objects given the student by the instructor.	5. BOOKS Giesecke, and Others. Technical Drawing, N.Y.: The MacMillan Co., 1967, pp. 30-32. Hepler, Donald and Paul I. Wallach. Architecture Drafting and Design, N.Y.: McGraw-Hill, 1965, pp. 115-121. Walker, John R. Exploring Drafting Basic Fundamentals	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
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The student will: . be exposed and use the various scales found on an architect scale. . by using drafting equipment available, draw various lines to pre-determined lengths given by the instructor. . measure and record dimensions of objects given the student by the instructor.	5. BOOKS Giesecke, and Others. Technical Drawing, N.Y.: The MacMillan Co., 1967, pp. 30-32. Hepler, Donald and Paul I. Wallach. Architecture Drafting and Design, N.Y.: McGraw-Hill, 1965, pp. 115-121. Walker, John R. Exploring Drafting Basic Fundamentals	5. Accuracy of recorded measurements and drawn dimensions will be checked to an accuracy of 1/16" of an inch to expose the student to an emphasis of accuracy of measurement used by architects.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		Homewood, Ill.: Goodheart-Willcox, 1967, pp. 47-49. SUPPLIES Architect scale, pencil, and drafting equipment as necessary	
B. SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL 1. To place emphasis on the general objectives found under Unit II, the student will select a type of construction to be made in a miniature form. He will document related occupations found necessary in the actual construction process. Examples of construction might include: (1) a dream summer resort; (2) an astrodome structure; (3) a suburban home	B. SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL 1. Class will discuss and select types of construction that might fit into a particular community. Information that could be delegated for individual and/or group research might include: (1) descriptive data on a community; (2) determination of area size; (3) determination of service capacity; (4) obtain a resumé of similar construction; (5) listing of supplies and equipment for shop construction; and, (6) procedure for maintaining a notebook on different occupations discovered during construction project.	B. SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL 1. (All previous resources.) Local newspapers (bid sections, industrial ads, home descriptions, etc.). Magazines.	

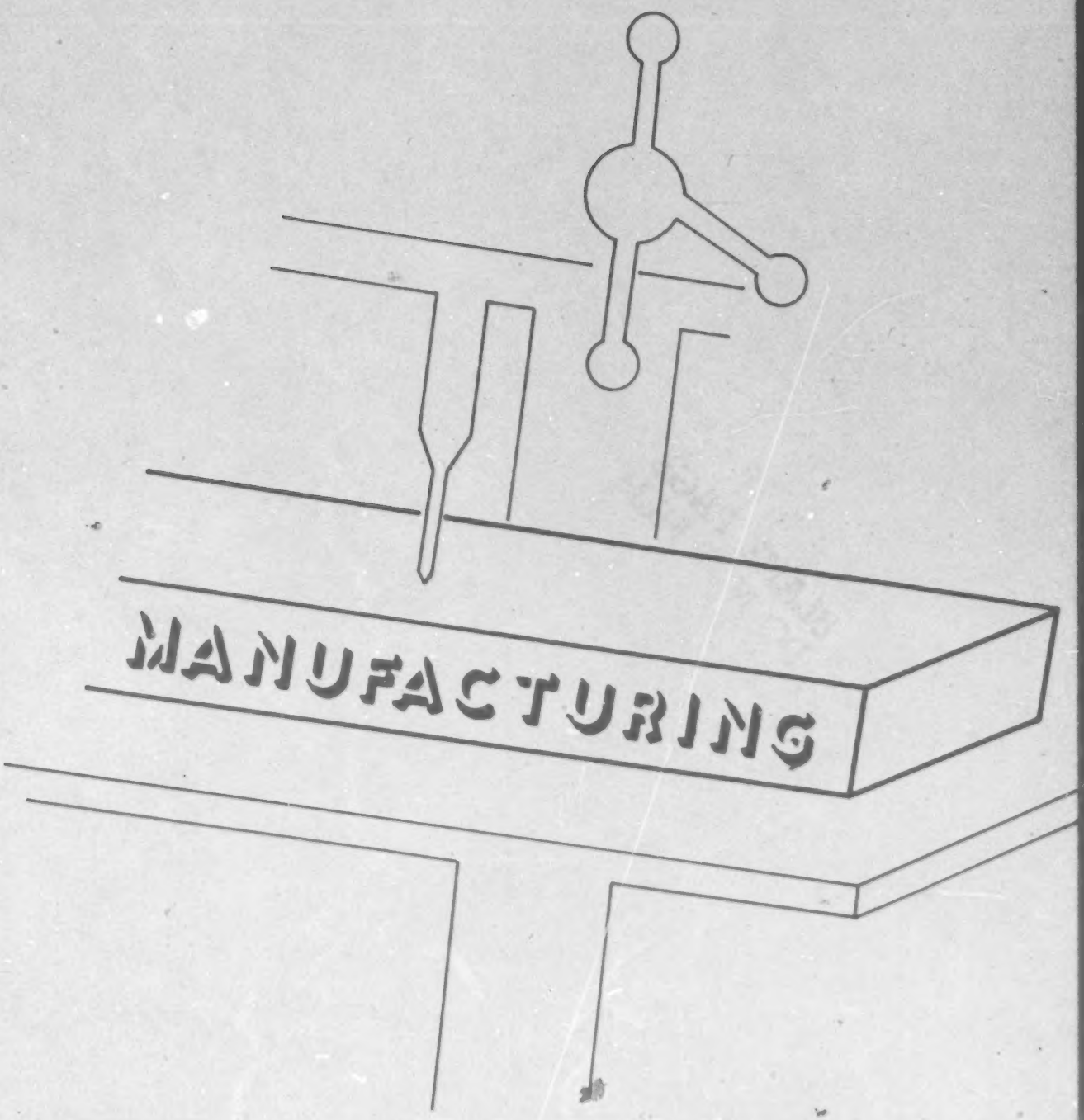
ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Homewood, Ill.: Goodheart-Willcox, 1967, pp. 47-49. SUPPLIES Architect scale, pencil, and drafting equipment as necessary	
SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL Class will discuss and select es of construction that might into a particular community. ormation that could be dele- ed for individual and/or up research might include:) descriptive data on a com- nity;) determination of area size;) determination of service acity;) obtain a resumé of similar struction;) listing of supplies and e- pment for shop construction;) procedure for maintaining otebook on different occupa- s discovered during con- uction project.	B. SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL 1. (All previous resources.) Local newspapers (bid sections, industrial ads, home descriptions, etc.). Magazines.	B. SIMULATED ACTIVITIES: GROUP OR INDIVIDUAL 1. Require a sketch and design on selected construction area. This to be used in later evaluation also. OR Possibly combine all sketched and as a group develop one as the best. AND Establish procedures for student notebook evaluation.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
(4) the layout of a space center; or, (5) a particular industrial plant.			
2. To be exposed into group activities, as used in construction "gangs," the students will divide into construction groups.	2. Selection of group leaders (to be rotated), and determination of group activities involved in the planning phase of construction.	2. (All previous resources.) FILM "Getting to Know Me," Eye Gate House, Inc., 14601 Archer Avenue, Jamaica, N. Y. 11935.	
3. To begin to view various occupations found in construction, the student will begin to list in his notebook occupational characteristics found in his own model construction. Traits could be: (1) skilled, semi-skilled, professional classification; (2) educational & skill requirements;	3. a. Identify jobs particular to his own model design. b. Visit representative construction sites. c. Meet with representative employers and employees after school.	3. (All previous resources.) FILM "Construction Workers" Ga. Film Library Service, Tifton, Georgia.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Selection of group leaders be rotated), and determination of group activities involved the planning phase of construction. Identify jobs particular to is own model design. Visit representative construction sites. Meet with representative employers and employees fter school.	2. (All previous resources.) FILM "Getting to Know Me," Eye Gate House, Inc., 14601 Archer Avenue, Jamaica, N. Y. 11935. 3. (All previous resources.) FILM "Construction Workers" Ga. Film Library Service, Tifton, Georgia.	2. a. List duties of a contractor. b. List procedures found in the planning phase of construction such as buying and purchasing land, deeds, titles, site selections, etc. c. Discuss the role of group activities. 3. Periodic check on notebook. Each occupation should begin to fit the model emphasis.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
(3) working conditions.			
4. Exposure to various construction occupations will be gained as the student becomes involved in the construction of his own model.	4. a. Observation of the different sites and preparation needs in their own community. b. Construct a "sand box" for the layout of their own model site. c. Engage in planning phase of construction such as: (1) design (2) drawing to scale working drawings (3) consulting with local land and survey group for techniques in site preparation. d. Construct model.	4. (All previous resources.) FILM "Architectural Drafting" Encyclopedia Britannica, Educational Suite 202, 141 William Road, N.E., Atlanta, Ga. 30342.	
5. a. Exposure to different types of construction such as road and bridge construction. b. The group will fill out forms on occupations involved in road and bridge construction. He will be able to identify several different occupations.	5. Visit road or bridge construction site. OR Design and lay out a road according to how it would appear on a surveyor's map. OR Figure costs of a road or bridge using state standards--cost per foot.	5. FILMSTRIP "Surveyors" Encyclopedia Britannica, 141 William Road, N.E., Atlanta, Ga. 30342. FIELD TRIP	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Observation of the different ites and preparation needs in heir own community. Construct a "sand box" for he layout of their own model ite. Engage in planning phase of onstruction such as: 1) design 2) drawing to scale working drawings 3) consulting with local land and survey group for techniques in site preparation. Construct model.	4. (All previous resources.) FILM "Architectural Drafting" Encyclopedia Britannica, Educational Suite 202, 141 William Road, N.E., Atlanta, Ga. 30342.	4. Site preparation could provide one source of evaluation. OR Plans could be evaluated by a team of experts for style, originality, dimensions, location, etc. AND Model itself could be judged by a panel of experts. AND Notebook will be checked for occupational information.
Visit road or bridge con-uction site. OR Design and lay out a road cording to how it would appear a surveyor's map. OR Figure costs of a road or idge using state standards--st per foot.	5. FILMSTRIP "Surveyors" Encyclopedia Britannica, 141 William Road, N.E., Atlanta, Ga. 30342. FIELD TRIP	5. Discuss with class results of field trip with emphasis on types of equipment found, occupations noted, and working conditions. OR Teacher design instrument to match or identify specific jobs.


MANUFACTURING

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT I MANUFACTURING	UNIT I MANUFACTURING	UNIT I MANUFACTURING	
A. INTRODUCTION	A. INTRODUCTION	A. INTRODUCTION	
1. The class will be introduced to two suggested structures of studies concerned with Manufacturing.	1. Brief discussion on how manufacturing can be sub-divided into component parts for a study of the industry or technology. A definition of manufacturing should evolve.	1. BOOKS Industrial Arts for the Middle Grades Manufacturing. Industrial Arts Education, Vocational Education Div., Office of Instructional Services, Ga. Dept. of Ed., Atlanta, Ga. 30334. Lux, Donald G. and Willis E. Ray. The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971.	
2. The class will be exposed to three possible divisions of manufacturing. From this they will begin to recognize various occupations found in manufacturing.	2. a. One phase, that of management, will be discussed as to its role and responsibility in the manufacturing process. b. The production phase will be discussed as it relates to the making of parts, assembly of these parts, and the preparation of the product for distribution.	2. RESOURCE PEOPLE a. Management personnel such as a president, general manager, or general foreman from a local industry. b. Skilled person in a local manufacturing industry.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT I MANUFACTURING INTRODUCTION Brief discussion on how manacturing can be sub-divided to component parts for a study the industry or technology. definition of manufacturing ould evolve. One phase, that of managenent, will be discussed as to ts role and responsibility in he manufacturing proc ss. The production phase will e discussed as it relates to he making of parts, assembly f these parts, and the prepration of the product for istribution.	UNIT I MANUFACTURING A. INTRODUCTION 1. BOOKS Industrial Arts for the Middle Grades Manufacturing. Industrial Arts Education, Vocational Education Div., Office of Instructional Services, Ga. Dept. of Ed., Atlanta, Ga. 30334. Lux, Donald G. and Willis E. Ray. The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971. 2. RESOURCE PEOPLE a. Management personnel such as a president, general manager, or general foreman from a local industry. b. Skilled person in a local manufacturing industry.	UNIT I MANUFACTURING A. INTRODUCTION 1. Question and answer period before and after presentation. 2. Evaluation could be based on information recorded on an earlier handed out data sheet. OR Class participation during presentation could be used to determine strong point or weak areas to be handled later.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	c. The phase of manufacturing directly related to the people, the personnel area, should be introduced.	c. Personnel manager or member of his staff.	
3. The student will be introduced to several examples of the mass production of several items. The student should be able to begin to see similar and contrasting occupations as presented.	3. Handout of booklets for review and study. OR Showing of a film related to mass production.	3. BOOKLETS "The Spark in Your Life" (spark plugs) AC Spark Plug Division, Public Relations Dept., 1300 North Dart Highway, Flint, Mich. 48556. "The Evolution of Mass Production" Educational Affairs Dept., Ford Motor Co., The American Road, Dearborn, Mich. FILMS "The Rouge" 20 min., Ford Motor Co. Film Library. "Science and Technology" American Iron & Steel Institute.	

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
. The phase of manufacturing directly related to the people, the personnel area, should be introduced.	2. Personnel manager or member of his staff.	OR Direct question and answer period following presentation.
Handout of booklets for review and study. OR Showing of a film related to mass production.	3. BOOKLETS "The Spark in Your Life" (spark plugs) AC Spark Plug Division, Public Relations Dept., 1300 North Dart Highway, Flint, Mich. 48556. "The Evolution of Mass Production" Educational Affairs Dept., Ford Motor Co., The American Road, Dearborn, Mich. FILMS "The Rouge" 20 min., Ford Motor Co. Film Library. "Science and Technology" American Iron & Steel Institute.	3. Class discussion.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT II MANUFACTURING A. SPECIFIC OCCUPATIONS IDENTIFICATION 1. Student will identify and differentiate the broad areas of occupations found in manufacturing occupations. 2. By comparison and contrasting manufacturing occupations by specific titles, occupations, the student will begin to formulate a concept of various employment possibilities.	UNIT II MANUFACTURING A. SPECIFIC OCCUPATIONS IDENTIFICATION 1. Discussion that will lead to an identification of basic production concepts and related occupational general titles. (Preparing raw materials, making industrial materials, making components, combining components, preparing for distribution.) Specific manufacturing examples to be selected by teacher (ex.: automobile, steel, electrical, etc.). 2. a. Based on student choice of a manufacturing technology, the student will develop a personnel organization chart of his own design with this chart showing representative occupational titles found in the management division of manufacturing.	UNIT II MANUFACTURING A. SPECIFIC OCCUPATIONS IDENTIFICATION 1-3. BOOKS Gerrish, H. H., Technical Dictionary. Homewood, Ill.: Goodheart-Willcox, 1970. Hoelscher and Springer, Engineering Drawing & Geometry. John Wiley and Sons. Hopke, W. E., Careers & Occupations. N.Y.: Doubleday, Inc. Industrial Arts for the Middle Grades, Industrial Arts Education, Vocational Education Division, Office of Instructional Services, Georgia Dept. of Ed., Atlanta, Ga. 30334	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT II MANUFACTURING SPECIFIC OCCUPATIONS IDENTIFICATION Discussion that will lead to identification of basic production concepts and related occupational general titles. (Preparing raw materials, making industrial materials, making components, combining components, preparing for distribution.) Specific manufacturing examples to be selected by teacher (ex.: automobile, steel, electrical, etc.). Based on student choice of a manufacturing technology, the student will develop a personnel organization chart of his own design with this chart showing representative occupational titles found in the management division of manufacturing.	UNIT II MANUFACTURING A. SPECIFIC OCCUPATIONS IDENTIFICATION 1-3. BOOKS Gerrish, H. H., Technical Dictionary. Homewood, Ill.: Goodheart-Willcox, 1970. Hoelscher and Springer, Engineering Drawing & Geometry, John Wiley and Sons. Hopke, W. E., Careers & Occupations. N.Y.: Doubleday, Inc. Industrial Arts for the Middle Grades, Industrial Arts Education, Vocational Education Division, Office of Instructional Services, Georgia Dept. of Ed., Atlanta, Ga. 30334	UNIT II MANUFACTURING A. SPECIFIC OCCUPATIONS IDENTIFICATION 1. Upon completion of this section, the student will be able to provide in a written or ora. form a working definition of what is meant by the term manufacturing. AND By means of a written report, the student will be able to show that occupations in manufacturing are indeed diverse. 2. a. Criteria for evaluation of chart will be on content not form.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	b. The student will produce a pie diagram using available drafting materials showing a specific manufacturing operation broken down into basic production concepts. c. Based on student choice of a manufacturing technology, the student will develop a personnel organization chart showing representative occupational titles found in the production division of manufacturing.	Lindbeck and Lathrop, General Industry, Peoria, Ill.: Bennett Books. Lux, Donald G. and Willis E. Ray, The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. Statistical Abstract, 1970. U. S. Government Printing Office, Washington, D. C.	
3. Student will list career possibilities in a specific area of manufacturing.	3. a. Using the framework above, student will select three or more specific occupational titles that interest him. Using drafting equipment, he will design a bar chart showing present and future job possibilities in these occupations. b. If possible, the student will be required to contact a representative person actually working in an occupation of interest to be used as a resource person by him.		

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
The student will produce a pie diagram using available drafting materials showing a specific manufacturing operation broken down into basic production concepts.	Lindbeck and Lathrop, General Industry, Peoria, Ill.: Bennett Books.	b. Evaluation of pie diagram will be based on content not quality of drawing.
Based on student choice of a manufacturing technology, the student will develop a personnel organization chart showing representative occupational titles found in the production division of manufacturing.	Lux, Donald G. and Willis E. Ray, The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971.	c. Criteria for evaluation will be on content not form.
	Occupational Outlook Handbook. Supt. of Documents, Washington, D. C.	
Using the framework above, student will select three or more specific occupational titles that interest him. Using drafting equipment, he will design a bar chart showing present and future job possibilities in these occupations.	Statistical Abstract, 1970. U. S. Government Printing Office, Washington, D. C.	3. a. Bar chart will be evaluated on content.
If possible, the student will be required to contact a representative person actually working in an occupation of interest to be used as a resource person by him.		b. Oral, written, or role playing of information supplied to him by resource person.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS	UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS	UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS
A. Entry Requirements Minimum Overall Requirements 1. a. Student will list the overall educational requirements for specific job entry. b. Given a list of jobs found in manufacturing, the student will compile a data sheet of basic educational needs. This to be incorporated into a workbook on data on manufacturing occupations.	A. 1. a. Given a questionnaire by the teacher, the student will complete this paper as he views the film. Questions will reflect needed educational requirements.	A. 1. a. Teacher prepared questionnaire. FILM: "The Electrical Worker" #7379 (30 min.), Georgia Department of Education. Local Chamber of Commerce publications. b. BOOK: Dictionary of Occupational Titles. Vols. I, II, & Supplement, Supt. of Doc., Washington, D. C. PAMPHLETS: "Education and Jobs, a series of pamphlets to guide young people to jobs that match different levels of education and training." Cat. No. L2.2:Ed 8/2, Supt. of Doc., Washington, D. C.

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS	UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS	UNIT III MANUFACTURING OCCUPATIONS EDUCATIONAL REQUIREMENTS
Given a questionnaire by the teacher, the student will complete this paper as he views the film. Questions will reflect needed educational requirements.	A. 1. a. Teacher prepared questionnaire. FILM: "The Electrical Worker" #7379 (30 min.), Georgia Department of Education. Local Chamber of Commerce publications. b. BOOK: Dictionary of Occupational Titles. Vols. I, II, & Supplement, Supt. of Doc., Washington, D. C. PAMPHLETS: "Education and Jobs, a series of pamphlets to guide young people to jobs that match different levels of education and training." Cat. No. L2.2:Ed 8/2, Supt. of Doc., Washington, D. C.	A. 1. a. Group discussion of film and related information. b. Check of notebook for data recorded.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		(Individual pamphlets may be purchased separately): (1) "Jobs for which a college education is usually required." L2.2:J57/5. (2) _____ high school education is generally required." L2.2:J57/3. (3) _____ high school education is preferred but not essential." L2.2:J57/2. (4) _____ junior college, technical institute, or other specialized training is usually required." L2.2:J57/4.	
2. Certain reading and mathematic skills are necessary for entry level into various manufacturing occupations. This activity will introduce you to the educational process of learning to read and use an outside micrometer.	2. a. Using the teacher supplied handout, record the indicated micrometer reading on the sketch itself. b. Record the measured reading of the indicated dimensions of the following objects: (1) blade of a machinist combination square. (2) 20 gauge sheet metal thickness. (3) spindle diameter of a micrometer	2. BOOKS Brown, Walter C. Basic Mathematics, Homewood, Ill.: Goodheart-Willcox, 1968, Unit 21, pp. 84-87. Fraser, Roland R. and Earl L. Bedell, General Metal, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962, pp. 25, 27. Gronemon, Chris H. and John L. Feirer, General Shop, N.Y.: McGraw-Hill, 1963, p. 222.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	(Individual pamphlets may be purchased separately): (1) "Jobs for which a college education is usually required." L2.2:J57/5. (2) _____ high school education is generally required." L2.2:J57/3. (3) _____ high school education is preferred but not essential." L2.2:J57/2. (4) _____ junior college, technical institute, or other specialized training is usually required." L2.2:J57/4.	
Using the teacher supplied handout, record the indicated micrometer reading on the sketch itself. Record the measured reading of the indicated dimensions of the following objects: (1) blade of a machinist combination square. (2) 20 gauge sheet metal thickness. (3) spindle diameter of a micrometer	2. BOOKS Brown, Walter C. Basic Mathematics, Homewood, Ill.: Goodheart-Willcox, 1968, Unit 21, pp. 84-87. Fraser, Roland R. and Earl L. Bedell, General Metal, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1962, pp. 25, 27. Gronemon, Chris H. and John L. Feirer, General Shop, N.Y.: McGraw-Hill, 1963, p. 222.	2. a. On a pre-determined accuracy guide, the recorded data will be checked. b. The conversion of recorded decimal to fraction will be checked for correctness.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	c. Convert the decimal reading of the micrometer into fractions.	Walker, John R., Modern Metal Working, Homewood, Ill.: Goodheart-Willcox, 1970, Unit 4, pp. 4-5 to 4-10 SUPPLIES Teacher designed handout, micrometer, machinist combination square, piece of 20 gauge sheet metal and data sheet.	
UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS	UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS	UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS	
A. ENTRY REQUIREMENTS	A. ENTRY REQUIREMENTS	A. ENTRY REQUIREMENTS	
1. Student will list particular skill requirements for job entry.	1. Given a questionnaire by the teacher, the student will complete this paper as he views a film. Questions will reflect needed skill requirements.	1. Teacher prepared questionnaire. FILM: "The Electrical Worker" #7349 (30 min.) Georgia Dept. of Education.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Convert the decimal reading of the micrometer into fractions.	Walker, John R., Modern Metal Working, Homewood, Ill.: Goodheart-Willcox, 1970, Unit 4, pp. 4-5 to 4-10 SUPPLIES Teacher designed handout, micrometer, machinist combination square, piece of 20 gauge sheet metal and data sheet.	
UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS	UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS	UNIT IV MANUFACTURING OCCUPATIONS SKILLS REQUIREMENTS
ENTRY REQUIREMENTS	A. ENTRY REQUIREMENTS	A. ENTRY REQUIREMENTS
Given a questionnaire by e teacher, the student will mplete this paper as he ews a film. Questions will flect needed skill requirements.	1. Teacher prepared questionnaire. FILM: "The Electrical Worker" #7349 (30 min.) Georgia Dept. of Education.	1. Questionnaire reflection of skills requirements.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. Manual dexterity and operation of various similar tools are required by many occupations. This activity will allow the student to experience examples of exact measurement required in related occupational demands of a machinist (600:280).	2. a. Measure, read, and record the blade width of a screwdriver point using dividers and a rule. Accuracy will be within ± 1/32 inch. b. Measure, read, and record the width, length, and height of a handle of a steel square using an outside caliper. Accuracy will be within ± 1/32 inch. c. Measure, read, and record the width and height of the handle of a steel square using a micrometer. Accuracy will be within ± .001 inch.	2. BOOKS Feirer, John L. General Metals, N.Y.: McGraw-Hill, 1967, pp. 276-277. Feirer, John L. & Tatro, Machine Tool Metalworking. N.Y.: McGraw-Hill, 1961, pp. 102-106. Johnson, Harold V. Machine Shop, Peoria, Ill.: Chars. A. Bennett Co., Inc., 1963, pp. 70-73; 77-78; 80; 87-90; 92. Ludwig, Oswald L. Metal Work, Bloomington, Ill.: McKnight & McKnight, 1962, pp. 49-51; 53-54; 61-65; 73-74; 75-81. Porter, Lascoe & Nelson. Machine Shop Operations and Setups, Chicago, 1967, pp. 22-23. Walker, John R. Modern Metalworking. Homewood, Ill.: Goodheart-Willcox, 1968, pp. 4-1 to 4-25; 5-1 to 5-2.	

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
2. a. Measure, read, and record the blade width of a screwdriver point using dividers and a rule. Accuracy will be within ± 1/32 inch. b. Measure, read, and record the width, length, and height of a handle of a steel square using an outside caliper. Accuracy will be within ± 1/32 inch. c. Measure, read, and record the width and height of the handle of a steel square using a micrometer. Accuracy will be within ± .001 inch.	2. BOOKS Feirer, John L. General Metals, N.Y.: McGraw-Hill, 1967, pp. 276-277. Feirer, John L. & Tatro, Machine Tool Metalworking. N.Y.: McGraw-Hill, 1961, pp. 102-106. Johnson, Harold V. Machine Shop, Peoria, Ill.: Chars. A. Bennett Co., Inc., 1963, pp. 70-73; 77-78; 80; 87-90; 92. Ludwig, Oswald L. Metal Work, Bloomington, Ill.: McKnight & McKnight, 1962, pp. 49-51; 53-54; 61-65; 73-74; 75-81. Porter, Lascoe & Nelson. Machine Shop Operations and Setups, Chicago, 1967, pp. 22-23. Walker, John R. Modern Metalworking. Homewood, Ill.: Goodheart-Willcox, 1968, pp. 4-1 to 4-25; 5-1 to 5-2.	2. a. Accuracy of recorded dimensions within ± 1/32 inch. b. Accuracy of recorded dimensions within ± 1/32 inch. c. Accuracy of recorded dimensions within ± .001 inch. AND Discussion with student(s) as to how he felt working with his hands within the somewhat exacting demands given.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		BOOKLET/KIT From the L. S. Starrett Co., Athol, Mass.: "How to Read" (Bul. No. 1203) pp. 2-4. "Training Aid Kit" (No. 1701) "The Tools & Rules for Precision Measuring," 1965, pp. 34-38. SUPPLIES Dividers, outside caliper, rule, micrometer, screwdriver, and steel square.	
3. Preference in hiring will frequently be given to workers with some exposure to machine operations. This activity will allow the student to be exposed to the job operations similar to those of an injection molder operator (556-885).	3. Making a screwdriver: 1. mix color desired with plastic; 2. put P-400 polystyrene or P-500 polypropylene in cylinder. 3. place blade in mold. 4. close mold and place in machine with center sprue hole under nozzle and clamp hand tight; 5. inject plastic; 6. part mold; 7. holding blade, lift screwdriver out of cavity;	3. BOOKS/LITERATURE Dictionary of Occupational Titles. Vol. I, 1965, p. 375, Supt. of Doc., Washington, D. C. Industrial Arts Supply Co., 1408 West Lake St., Minneapolis, Minn. Polyethylene literature available from Technical Literature Dept., U. S. Industrial Chemical Co., 99 Park Ave., New York, N. Y.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	BOOKLET/KIT From the L. S. Starrett Co., Athol, Mass.: "How to Read" (Bul. No. 1203) pp. 2-4. "Training Aid Kit" (No. 1701) "The Tools & Rules for Precision Measuring," 1965, pp. 34-38. SUPPLIES Dividers, outside caliper, rule, micrometer, screwdriver, and steel square.	
Making a screwdriver: 1. mix color desired with plastic; 2. put P-400 polystyrene or P-500 polypropylene in cylinder. 3. place blade in mold. 4. close mold and place in machine with center sprue hole under nozzle and clamp hand tight; 5. inject plastic; 6. part mold; 7. holding blade, lift screwdriver out of cavity;	3. BOOKS/LITERATURE Dictionary of Occupational Titles. Vol. I, 1965, p. 375, Supt. of Doc., Washington, D. C. Industrial Arts Supply Co., 1408 West Lake St., Minneapolis, Minn. Polyethylene literature available from Technical Literature Dept., U. S. Industrial Chemical Co., 99 Park Ave., New York, N. Y.	3. Screwdriver handle should be fully formed without sags or discolored. AND Discuss with student the way he would think he would feel doing repetitive work day-in and day-out.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	8. place new blade in mold and repeat cycle. It should be noted that once the proper technique has been acquired, one will only need to change molds to produce different items.	EQUIPMENT/SUPPLIES 1. Injection molding machine 2. Mold(s) 3. P-400 Polystyrene or P-500 Polypropylene 4. M-136E Screwdriver Blade 5. Appropriate colorant
4. A lathe operator is a skilled workman. Those who may use a lathe include a machinist (600.280); set-up man (machine tools--600.380) tool and diemaker (600.280); and a machine tool operator (600.280). The student will be exposed to a laboratory exercise so that he will be able to go through the set up and adjustment of a metal lathe.	4. The student will set up and turn a piece of stock between two centers using both a 3 jaw universal chuck and then a lathe dog.	4. BOOKS Johnson, Harold V. General-Industrial Machine Shop, Peoria, Ill.: Chas. A. Bennett Co., Inc., 1963, pp. 136-152. Knight, Roy F. Engine Lathe Operation, Bloomington, Ill.: McKnight & McKnight, 1962, pp. 31-34. Ludwig, Oswald A. Metal Work: Technology and Practice. Bloomington, Ill.: McKnight & McKnight, 1962, pp. 437-445. MATERIALS Instructor project sheet and instruction or procedure sheet.

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
8. place new blade in mold and repeat cycle. t should be noted that once the proper technique has been acquired, one will only need to change molds to produce different items.	EQUIPMENT/SUPPLIES 1. Injection molding machine 2. Mold(s) 3. P-400 Polystyrene or P-500 Polypropylene 4. M-136B Screwdriver Blade 5. Appropriate colorant	
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OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		TOOLS/SUPPLIES 1. Engine lathe (equipped) 2. Center drilled piece of stock 3. Spindle sleeve 4. Live center and dead center 5. Face plate and lathe dog 6. 3-jaw universal chuck	
UNIT V PROGRESSION OR ADVANCEMENT A. EDUCATIONAL/ SKILLS 1. Student will select at least three different occupations and list specific educational and skilled requirements for job entry.	UNIT V PROGRESSION OR ADVANCEMENT A. EDUCATIONAL/SKILLS 1. Students will be formed into panels consisting of like occupational clusters. An oral presentation of similar job entry educational requirements will be given. When applicable, a demonstration of specific skill needed for job entry will be demonstrated by the student. (Ex.: soldering skills for electrical work;	UNIT V PROGRESSION OR ADVANCEMENT A. EDUCATIONAL/SKILLS 1. FILM: "Age of Specialization" #4625 (13 min.); Georgia Dept. of Education. SUPPLIES: References, tools as needed.	

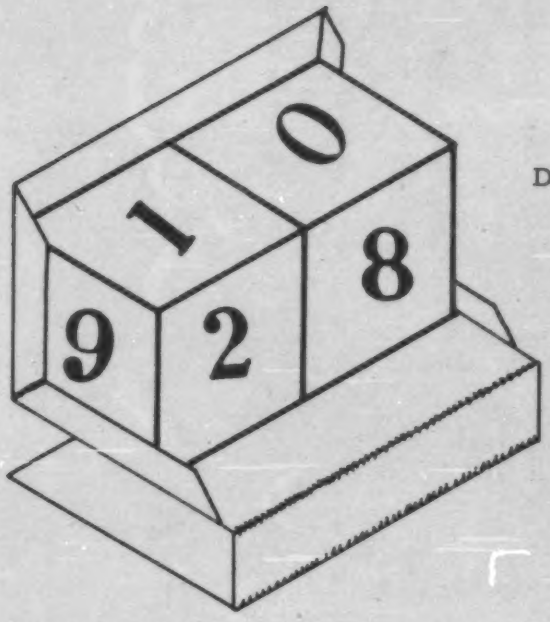
EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	TOOLS/SUPPLIES 1. Engine lathe (equipped) 2. Center drilled piece of stock 3. Spindle sleeve 4. Live center and dead center 5. Face plate and lathe dog 6. 3-jaw universal chuck	OR Written or oral expression of the student concerning topics such as: 1. working with one's hands; 2. working around moving machinery; 3. repetitive work; 4. getting one's hands dirty; 5. working alone.
UNIT V PROGRESSION OR ADVANCEMENT EDUCATIONAL/SKILLS	UNIT V PROGRESSION OR ADVANCEMENT A. EDUCATIONAL/SKILLS	UNIT V PROGRESSION OR ADVANCEMENT A. EDUCATIONAL/SKILLS
Students will be formed into anels consisting of like occupational clusters. An oral resentation of similar job ntry educational requirements ill be given. When applicable, a demonstration of pecific skill needed for job ntry will be demonstrated by ne student. (Ex.: soldering kills for electrical work;	1. FILM: "Age of Specialization" #4625 (13 min.); Georgia Dept. of Education. SUPPLIES: References, tools as needed.	1. Evaluation of this section will be made by evaluation of oral presentation and/or demonstration of ed. and skill requirements.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	running beads for welders; micrometer reading demonstration for machine shop; slide rule reading for technician; etc.		
2. Student will identify procedures for updating in educational or skilled requirements.	2. Student will compile and list procedures to be followed for updating or advancement in at least three specific occupation titles of his choice.	2. REFERENCE PERSONNEL 1. Working personnel in specific job. 2. Local area vocational high school instructors. 3. Local area vocational-technical school instructional staff. BOOKS Occupational Outlook Handbook, Supt. of Doc., Washington, D.C. Statistical Abstracts, 1970, Supt. of Doc., Washington, D.C.	
3. Student will determine and list factors that will aid him in making decisions related to job advancement.	3. Written essay on what factors he perceives as necessary for job advancement.	3. All previous resources.	

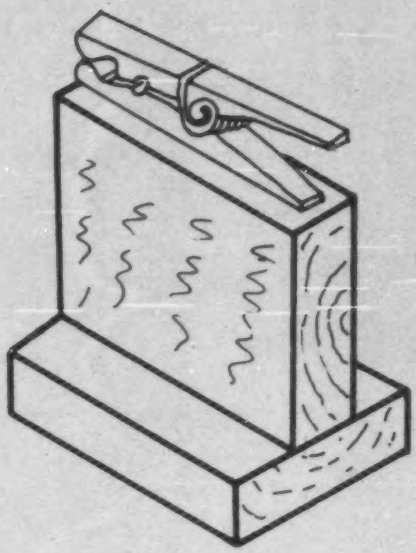
ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
nning beads for welders; icrometer reading demonstra- n for machine shop; slide le reading for technician; etc.		
Student will compile and list ocedures to be followed for dating or advancement in at st three specific occupation les of his choice.	2. REFERENCE PERSONNEL 1. Working personnel in specific job. 2. Local area vocational high school instructors. 3. Local area vocational-technical school instructional staff. BOOKS Occupational Outlook Handbook, Supt. of Doc., Washington, D.C. Statistical Abstracts, 1970, Supt. of Doc., Washington, D.C.	2. Interlocking evaluation in conjunction with local English teacher, guidance personnel of report.
Written essay on what fac- s he perceives as necessary job advancement.	3. All previous resources.	3. Content of essay paper.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION	UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION	UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION	
A. OVERVIEW The production phase of manufacturing will be utilized to expose the students to setting attributes and personal attributes as they relate to considerations in choosing and securing a job.	A. OVERVIEW A mass production activity of an item such as a desk calendar, clip note holder, or game as shown on next page of this document. Emphasis can be placed on making of component parts, assembly of parts into a whole, and packaging for distribution.	A. OVERVIEW (All previous resources.) Laboratory equipment, materials, and supplies as available.	
B. SETTING ATTRIBUTES 1. a. The student will identify setting attributes pertaining to a job selection and will differentiate these as to factors in choosing an occupation. These attributes will include:	B. SETTING ATTRIBUTES 1. a. Using the appropriate sheet metal equipment, each student will construct alone a one-piece metal box with lapped corners and a single hem.	B. SETTING ATTRIBUTES 1. a. BOOKS Bruce, Leroy F. and Leo A. Meyer. Sheet Metal Shop Practice, Chicago: American Technical Society, 1965, pp. 169-175, 266-267.	

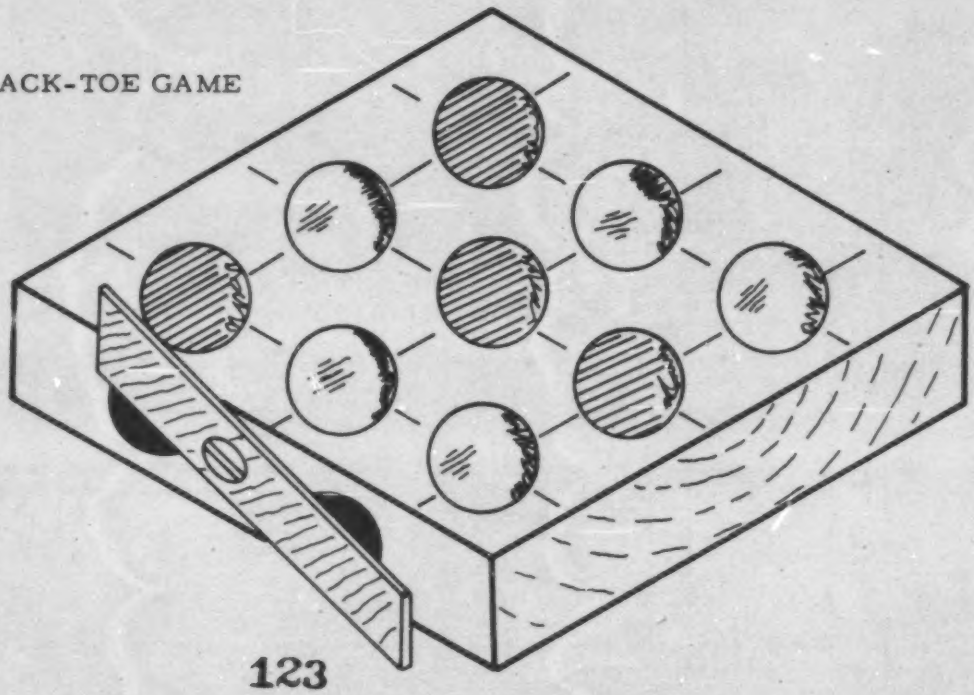
EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION	UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION	UNIT VI OCCUPATIONAL ENVIRONMENTAL CONSIDERATION
OVERVIEW	A. OVERVIEW	A. OVERVIEW
A mass production activity of n item such as a desk calendar, lip note holder, or game as hown on next page of this docu-ent. Emphasis can be placed n making of component parts, ssembly of parts into a whole, nd packaging for distribution.	(All previous resources.) Laboratory equipment, materials, and supplies as available.	Oral individual and/or group discussion of feeling towards segments of activities. OR Observation of actions of individuals or groups. OR Written assignments. OR Panel discussion or debates.
SETTING ATTRIBUTES	B. SETTING ATTRIBUTES	B. SETTING ATTRIBUTES
Using the appropriate sheet metal equipment, each student will construct alone a one-piece metal box with lapped corners and a single hem.	1. a. BOOKS Bruce, Leroy F. and Leo A. Meyer. Sheet Metal Shop Practice, Chicago: American Technical Society, 1965, pp. 169-175, 266-267.	1. a. At the end of this section, the student will be able to list or discuss at least three differentiable factors that would separate conditions found in working alone as contrased to working in a group situation.



DESK CALENDAR



CLIP NOTE HOLDER



TICK-TACK-TOE GAME

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
Group size and dynamics in work settings.	AND Within a simulated mass production structure (emphasis on specific job classification), the students as a body may produce such items as a sheet metal funnel, trash receptacle (round or square), or magazine holder.	Gronemon, Chris H. and John L. Feirer. General Shop, Homewood, Ill.: Goodheart-Willcox, 1963.	
b. Indoor vs. outdoor conditions.	b. Using the outside surrounding school facilities, a survey party will be formed to seek and list raw materials found and to classify these as to either being reproducible raw materials or extractive raw materials that could be utilized in a manufacturing process. Specific occupations that are used to "process" or "gather" these materials will be noted with specific climatic conditions that would affect such work.	b. BOOK Lux, Donald G. and Willis E. Ray. The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight, 1971, pp. 232-251. CHART "Picture Set: Making Iron & Steel" United States Steel Corp., New York, Room 1800, 71 Broadway, N.Y., N.Y. PAMPHLET "The Railroad Rail--Raw Materials to Right of Way" Bethlehem Steel Co., Pub. Dept., Bethlehem, Pa.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
AND Within a simulated mass production structure (emphasis on specific job classification), the students as a body may produce such items as a sheet metal funnel, trash receptacle (round or square), or magazine holder. Using the outside surrounding school facilities, a survey party will be formed to seek and list raw materials found and to classify these as to either being reproducible raw materials or extractive raw materials that could be utilized in a manufacturing process. Specific occupations that are used to "process" or "gather" these materials will be noted with specific climatic conditions that would affect such work.	Gronemon, Chris H. and John L. Feirer. General Shop, Homewood, Ill.: Goodheart-Willcox, 1963. b. BOOK Lux, Donald G. and Willis E. Ray. The World of Manufacturing, Bloomington, Ill.: McKnight & McKnight, 1971, pp. 232-251. CHART "Picture Set: Making Iron & Steel" United States Steel Corp., New York, Room 1800, 71 Broadway, N.Y., N.Y. PAMPHLET "The Railroad Rail--Raw Materials to Right of Way" Bethlehem Steel Co., Pub. Dept., Bethlehem, Pa.	b. At the end of this section, the student will be required to list several advantages and disadvantages as found in out-door supportative occupations. OR Take an arbitrary position of either in or out-door work and be able to list several reasons why he would or would not like such working conditions. OR List several advantages and disadvantages as found in in-door occupations.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	AND Using the existing laboratory, the student will produce a list of manufactured products there and will attempt to identify specific raw materials found in such products. This research is to contrast indoor and outdoor conditions.	FILM "Curtains of Steel" Republic Steel Corp., Public Relations Dept., Republic Bldg., Cleveland, Ohio. INTEGRATED TEACHING AIDS (Filmstrip, teachers guide, text, bottled samples of raw materials) "KIT: How Steel is Made" United States Steel Corp., N.Y., Room 1800, 71 Broadway, N.Y., N.Y.
c. Working hours & salaries. d. Responsibilities. e. Working locations: 1. ground/ elevated 2. mobile/fixed 3. urban/rural f. Hazards.	c-f. The student will list and differentiate factors that are included in an occupational choice such as salary, hours of work, responsibilities, working locations and hazards. Simulation of several of these factors can be accomplished in the laboratory involvement in the production of a salable good; for ex.: a corporation dissolved and profits shared. Such a mass produced item could include: a high intensity desk lamp; and/or an economic ignition and spark plug tester.	c-f. BOOKS Gerrish, Howard H. Transistor Electronics, Homewood, Ill.: Goodheart-Willcox, Inc., 1969, pp. 122-125. (High intensity lamp.) Lux, Donald G. and Willis E. Ray. The World of Manufacturing, (Student Laboratory Manual), Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971, pp. 311-365. (Lamp)

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
AND Using the existing laboratory, the student will produce a list of manufactured products there and will attempt to identify specific raw materials found in such products. This research is to contrast indoor and outdoor conditions.	FILM "Curtains of Steel" Republic Steel Corp., Public Relations Dept., Republic Bldg., Cleveland, Ohio. INTEGRATED TEACHING AIDS (Filmstrip, teachers guide, text, bottled samples of raw materials) "KIT: How Steel is Made" United States Steel Corp., N.Y., Room 1800, 71 Broadway, N.Y., N.Y.	
f. The student will list and differentiate factors that are included in an occupational choice such as salary, hours of work, responsibilities, working locations and hazards. Simulation of several of these factors can be accomplished in the laboratory involvement in the production of a salable good; for ex.: a corporation dissolved and profits shared. Such a mass produced item could include: a high intensity desk lamp; and/or an economic ignition and spark plug tester.	c-f. BOOKS Gerrish, Howard H. Transistor Electronics, Homewood, Ill.: Goodheart-Willcox, Inc., 1969, pp. 122-125. (High intensity lamp.) Lux, Donald G. and Willis E. Ray. The World of Manufacturing, (Student Laboratory Manual), Bloomington, Ill.: McKnight & McKnight Pub. Co., 1971, pp. 311-365. (Lamp)	c-f. If a corporation is formed, the profits would be a good index of success. OR Observation of student conversation, actions, involvement, etc. could provide information for evaluation. OR Teacher designed testing instrument.

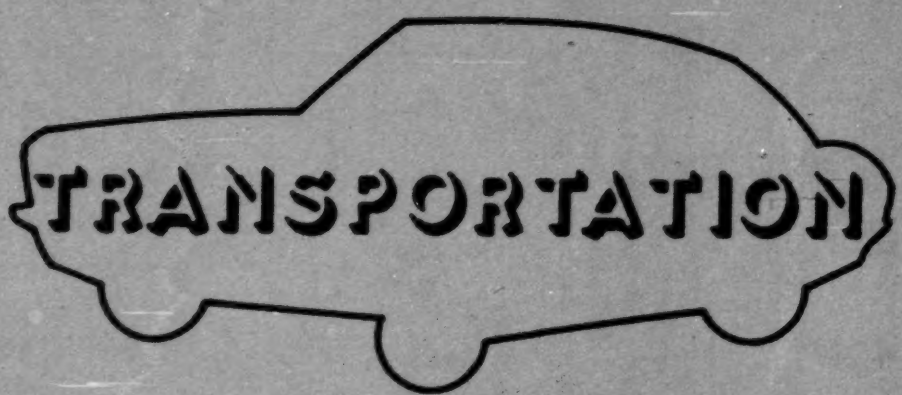
OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		Steinberg, William F. and Walter B. Ford. Basic Electricity & Electronics, Chicago: American Technical Society, 1964, pp. 209-210. (Ignition and Spark Plug Tester)	
2. The student will describe writing factors that are pro and con in his relationship in the selection of an occupation based on setting attributes.	2. Based on experiences gained by the student in the preceding activities, the student will compile a resume of factors he considers as pro or con in setting attributes as related to an occupational choice.	2. (All previous resources.) RESOURCE PEOPLE 1. Teacher 2. Guidance personnel 3. Actual workers 4. Parents 5. Personal preference survey	
3. The student will list considerations to be made in an occupational choice based on personal attributes that will include: 1. social acceptability. 2. physical requirements. 3. psychological considerations.	3. A panel will be formed consisting of students and resource personnel to discuss considerations listed.	3. (All previous resources.)	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Steinberg, William F. and Walter B. Ford. Basic Electricity & Electronics, Chicago: American Technical Society, 1964, pp. 209-210. (Ignition and Spark Plug Tester)	
Based on experiences gained the student in the preceding tivities, the student will com- le a resume of factors he con- ders as pro or con in setting tributes as related to an oc- pational choice.	2. (All previous resources.) RESOURCE PEOPLE 1. Teacher 2. Guidance personnel 3. Actual workers 4. Parents 5. Personal preference survey	2. Evaluation based on content in resume and group discussion.
A panel will be formed con- sting of students and resource rsonnel to discuss considera- ns listed.	3. (All previous resources.)	3. Group question and answer session. OR Individual and/or group written summary.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT VII OCCUPATIONAL CHOICE FACTORS	UNIT VII OCCUPATIONAL CHOICE FACTORS	UNIT VII OCCUPATIONAL CHOICE FACTORS	
1. The student will select at least three occupational titles in which he has expressed interest. He will compile a brief resumé of his studies of these occupations that will include: a. specific job classifications; b. educational and skill requirements; c. specific environmental condition he feels is important; d. list future economic outlook for occupations; e. will list present employment possibilities; f. will list his likes and dislikes as related to an occupational choice.	1. The student will turn in a brief written report that incorporates all the objectives listed under Unit IV.	1. (All previous resources.)	

MANUFACTURING

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT VII OCCUPATIONAL CHOICE FACTORS	UNIT VII OCCUPATIONAL CHOICE FACTORS	UNIT VII OCCUPATIONAL CHOICE FACTORS
The student will turn in a brief written report that incorporates all the objectives listed under Unit IV.	1. (All previous resources.)	1. Evaluation of written report with care given to specific trends in interest that appear to be being expressed.


TRANSPORTATION

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
UNIT I TRANSPORTATION	UNIT I TRANSPORTATION	UNIT I TRANSPORTATION	
A. INTRODUCTION	A. INTRODUCTION	A. INTRODUCTION	
1. The student will be able to describe orally or list the operation and purpose of the program.	1. Group meeting of all students involved in career transportation. Teacher will give an oral overview of the transportation objectives, activities, and evaluation procedures.	1. RESOURCE PERSON The Industrial Arts instructor.	
2. The student will be introduced to some of the significant changes in the development of transportation relevant to our western civilization.	2. Identify four different models of automobile, plane, or ship (since around 1900) with ten year intervals, showing significant improvement. Design a chart or collage description of advancement.	2. BOOKS & REFERENCES Encyclopedia Americana Encyclopaedia Britannica "Transportation Progress" booklets available from: General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202. FILM "Before Saturn" (HQ a76-1962 14 min.--from NASA John F. Kennedy Space Center, Code SOP 323, Kennedy Space Center, Florida 32899.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
UNIT I RANSPORTATION	UNIT I TRANSPORTATION	UNIT I TRANSPORTATION
INTRODUCTION	A. INTRODUCTION	A. INTRODUCTION
Group meeting of all students olved in career transporta- n. Teacher will give an oral rview of the transportation ectives, activities, and eval- ion procedures.	1. RESOURCE PERSON The Industrial Arts instructor.	1. The teacher, upon completion of the introduction, will direct oral questions to the group and/or individuals to obtain degree of course (operation and function) understanding.
Identify four different models utomobile, plane, or ship ce around 1900) with ten year rvals, showing significant rovement. Design a chart collage description of ad- cement.	2. BOOKS & REFERENCES Encyclopedia Americana Encyclopaedia Britannica "Transportation Progress" booklets available from: General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202. FILM "Before Saturn" (HQ a76-1962 14 min. --from NASA John F. Kennedy Space Center, Code SOP 323, Kennedy Space Center, Florida 32899.	2. Chart or collage will be evaluated as to content. It will be judged on a pre-described number of required modes of transportation and number of significant major improvements.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
3. The student will, in a written form, present specific information in regard to occupations, educational requirements, examples of types of jobs, skills as well as hazards involved in occupations currently employed under the broad heading of land, sea, and air transportation.	3. a. Fill out sample job application form. Contrast between the occupations of land, sea, and air. b. By role playing, "sell" yourself to a personnel manager during a personal interview and emphasize your skills and educational attainments based on research of minimum requirements in an occupation of your choice. c. Write a sample job resume with emphasis on minimum requirements for job entry based on your research.	3. BOOKS & REFERENCES Dictionary of Occupational Titles (Vols. I & II & Supplement). Supt. of Documents, Washington, D. C. How to Find and Apply for a Job. South-Western Pub. Co., Chicago, Ill. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. FILMS "Career," Double Day, Calhoun Co., Atlanta, Ga. (8mm-16mm) "Occupation: Auto Mechanic" 16mm (various occupations) from Marketing Staff, Service Section, General Motors Building, Detroit, Mich. 48202. "The American Road," Ford Motor Co., Dearborn, Mich. 16mm. FILMSTRIPS & RECORD. "Trans. & Com.", Calhoun Co., Atlanta, Ga. 16mm.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Fill out sample job applica- on form. Contrast between e occupations of land, sea, nd air.	3. BOOKS & REFERENCES Dictionary of Occupational Titles (Vols. I & II & Supplement). Supt. of Documents, Washington, D. C. How to Find and Apply for a Job. South-Western Pub. Co., Chicago, Ill. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C.	3. a. Select and fill out two different job application forms correctly. (These forms may be obtained from local sources or one may be designed by the teacher to test for specific information from student's research.)
By role playing, "sell" your- elf to a personnel manager uring a personal interview nd emphasize your skills and ducational attainments based n research of minimum re- uirements in an occupation f your choice.	FILMS "Career," Double Day, Calhoun Co., Atlanta, Ga. (8mm-16mm) "Occupation: Auto Mechanic" 16mm (various occupations) from Marketing Staff, Service Section, General Motors Building, Detroit, Mich. 48202. "The American Road," Ford Motor Co., Dearborn, Mich. 16mm.	b. Observation of student's attitude, information discussed, and class participation in a group discussion following role playing.
Write a sample job resume ith emphasis on minimum re- uirements for job entry based n your research.		c. This resume will be viewed from a content criteria and may be shared with communications skill teacher for his or her comments.
	FILMSTRIPS & RECORD. "Trans. & Com.", Calhoun Co., Atlanta, Ga. 16mm.	

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
4. To show some diversification in transportation occupations, some unusual or seldom mentioned occupations will be introduced. These may include: Automobile Racer: 153.248 Bus Driver: 912.463 Commercial Airplane Pilot: 196.283 Ship Pilot: 197.133	4. a. Outside assignment to identify interview, and describe characteristics of unique or seldom mentioned occupations. This information to be presented to the class to produce a pamphlet "Unique Transportation Occupations." b. Discussion held by panel of students on research on unique occupations.	4. RESOURCE PEOPLE Guest speaker who has a unique occupation. On-the-job visit to unique occupations by individual students after school.
UNIT II TRANSPORTATION	UNIT II TRANSPORTATION	UNIT II TRANSPORTATION
A. WATER, PERSONAL & PLEASURE	A. WATER, PERSONAL AND PLEASURE	A. WATER, PERSONAL AND PLEASURE
1. Distinguish between a trans-Atlantic ship, local cruiser and a personal run-about boat in regard to purpose, personnel, and carrier description.	1. Produce from magazine and other sources photograph and clipping emphasizing: a. trans-Atlantic ship (1) purpose (2) traveling distance (3) types of operational personnel (4) vessel description	1. CATALOG & BROCHURES "Fishing and Boating Equipment Catalog (39K7560)." Sears, Roebuck, & Co., Atlanta, Ga. 30308. "A Liner in Port" (Brochure 222-1). Ship Traveling Agency, Mobile, Alabama. FILM Nashville Product Co., Nashville, Tenn.

CARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Outside assignment to identify nterview, and describe charac- eristics of unique or seldom nentioned occupations. This nformation to be presented to he class to produce a pamph- et "Unique Transportation Occupations." Discussion held by panel of tudents on research on unique ccupations.	4. RESOURCE PEOPLE Guest speaker who has a unique occupation. On-the-job visit to unique occupations by individual students after school.	4. a. Production of pamph- let as viewed from con- tent material. b. Peer evaluation on presentations.
UNIT II :ANSPORTATION	UNIT II TRANSPORTATION	UNIT II TRA NSPORTATION
WATER, PERSONAL AND PLEASURE	A. WATER, PERSONAL AND PLEASURE	A. WATER, PERSONAL AND PLEASURE
Produce from magazine and er sources photograph and pping emphasizing: trans-Atlantic ship 1) purpose 2) traveling distance 3) types of operational per- sonnel 4) vessel description	1. CATALOG & BROCHURES "Fishing and Boating Equip- ment Catalog (39K7560)." Sears, Roebuck, & Co., At- lanta, Ga. 30308. "A Liner in Port" (Brochure 222-1). Ship Traveling Agen- cy, Mobile, Alabama. FILM Nashville Product Co., Nash- ville, Tenn.	1. Content evaluation of display poster and clipping of types of engines used in trans- Atlantic traveling, personal run-about.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	b. local cruise (1) purpose (2) traveling distance (3) personnel and related occupation (4) vessel description c. personal run-about boat (1) purpose (2) traveling distance (3) related occupation (4) vessel types and description	FILMSTRIPS The Panama Canal ERL Record, Ships Large and Small 222-3, Nashville Product Co., Nashville, Tennessee. The Work Ships Do, 222-1, Nashville Product Co., Nashville, Tennessee. Transportation Set, Calhoun Co., Atlanta, Ga.	
2. Identify five major skills occupations involved in a trans-Atlantic ship and contrast these skills with those involved in a personal run-about boat.	2. a. Contact ship liner headquarters for: (1) qualifications (2) educational requirements (3) opportunities (4) earnings (5) hazards b. Visit local marine repair shop: (1) observe and question personnel: (a) skills involved (b) advancements (c) salary	2. BOOKS Dictionary of Occupational Titles. Supt. of Documents, Washington, D. C. Occupational Outlook Handbook. Supt. of Documents, Washington, D.C. RESOURCE PERSONS People representing local occupational offerings.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
local cruise 1) purpose 2) traveling distance 3) personnel and related occupation 4) vessel description personal run-about boat 1) purpose 2) traveling distance 3) related occupation 4) vessel types and description	FILMSTRIPS The Panama Canal ERL Record, Ships Large and Small 222-3, Nashville Product Co., Nashville, Tennessee. The Work Ships Do, 222-1, Nashville Product Co., Nashville, Tennessee. Transportation Set, Calhoun Co., Atlanta, Ga.	
Contact ship liner headuarters for: 1) qualifications 2) educational requirements 3) opportunities 4) earnings 5) hazards	2. BOOKS Dictionary of Occupational Titles. Supt. of Documents, Washington, D. C. Occupational Outlook Handbook. Supt. of Documents, Washington, D.C.	2. a. Written or oral report of visit. If given out before hand, a specific data sheet to be filled out during visit could be taken up immediately following the trip and this evaluated.
Visit local marine repair hop: 1) observe and question personnel: (a) skills involved (b) advancements (c) salary	RESOURCE PERSONS People representing local occupational offerings.	b. If slides of visit were taken, discussion of occupation implications could give insights into student views.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	c. Develop and show line of positions in management by chart of the occupation in a representative occupation. d. Simulate: preparing to travel abroad: (1) passport (2) purchasing of ticket (3) insurance (4) scenery	
3. The student will contrast between the different power source of a run-about boat and a trans-Atlantic ship, and occupation skill required by some in the operation and maintenance of these sources of power.	3. a. Identify and when possible display various types of fuel used in ship, cruise, and boats. b. Given a small gasoline engine, the student will dismantle and re-assemble the engine to be introduced to tools and skills required in performance of maintenance duties. c. Compile a list of sources of power.	3. BOOK Purvis, Jud. All About Small Gas Engines, Homewood, Ill.: Goodheart-Willcox, 1970. BOOKLETS & FILMS From General Motors Film Library & General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202: "A Power Primer" and "Diesel, The Modern Power" (booklet) "The Story of Power" FILMSTRIP Outboard Motors--DCA, Calhoun Co., Atlanta, Georgia.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Develop and show line of positions in management by chart of the occupation in a representative occupation. Simulate: preparing to travel abroad: 1) passport 2) purchasing of ticket 3) insurance 4) scenery		c. Chart content checked against predetermined and explained criteria. d. Observation of activities.
Identify and when possible display various types of fuel used in ship, cruise, and boats. Given a small gasoline engine, the student will dismantle and re-assemble the engine to be introduced to tools and skills required in performance of maintenance duties. Compile a list of sources of power.	3. BOOK Purvis, Jud. All About Small Gas Engines, Homewood, Ill.: Goodheart-Willcox, 1970. BOOKLETS & FILMS From General Motors Film Library & General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202: "A Power Primer" and "Diesel, The Modern Power" (booklet) "The Story of Power" FILMSTRIP Outboard Motors--DCA, Calhoun Co., Atlanta, Georgia.	3. a. Display construction and content. b. Attitudes expressed on working condition in related jobs. Can be oral or written. c. List construction. OR Brief paper on sources of power today and how you would like to be involved in working with them.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
4. Actively seek and present information about rules, policies, education and expectations associated with a given work task involved in water transportation.	4. Role playing concerned with occupational aspects of a chosen occupation with discussion of why or why not you would like this as a chosen career.	4. BOOKLET "Chapman's--Piloting, Seamanship, and Small Boat Handling." (6K62714) Sears, Roebuck Co., Atlanta, Ga. 30308.
5. Study the jobs that are found in a pleasure craft marine. Objective will include: The student will identify some of the personnel involved in the marine industry. Seek information about rules, policies, expectations of an outboard marine dealer. Student will identify location of employment opportunities. Students will list factors that will influence future growth and development of the marine industry.	5. a. Simulate the operation of a pleasure craft, outboard marine dealer: (1) Owner (a) insurance (b) purchasing (c) tax (d) sales (e) advertising (2) Salesman (a) meet people (b) promote product (c) write sale slips (d) know inventory (e) flexibility (understand peoples' needs) (3) Rigger (a) outfit boats (b) general maintenance (c) boat rigging repair (d) fiberglass repair	5. PAMPHLET/REFERENCES "Job Analysis" Cat. No. L7. 61:E3. Supt. of Documents, Washington, D. C. Dictionary of Occupational Titles, Vol. 1. Cat. No. L7. 2:Oc1/965/v.1; Vol. 2 Cat. No. L7.2:Oc1/965/v.2; Supplement Cat. No. L7.2:Oc1/965/supp.2. TRANSPARENCIES Out Board Motor, Calhoun Co., Atlanta, Ga.

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Role playing concerned with cupational aspects of a chosen cupation with discussion of y or why not you would like s as a chosen career. Simulate the operation of a leasure craft, outboard ma-ine dealer: 1) Owner (a) insurance (b) purchasing (c) tax (d) sales (e) advertising 2) Salesman (a) meet people (b) promote product (c) write sale slips (d) know inventory (e) flexibility (understand peoples' needs) 3) Rigger (a) outfit boats (b) general maintenance (c) boat rigging repair (d) fiberglass repair	4. BOOKLET "Chapman's--Piloting, Seamanship, and Small Boat Handling." (6K62714) Sears, Roebuck Co., Atlanta, Ga. 30308. 5. PAMPHLET/REFERENCES "Job Analysis" Cat. No. L7.61:E3. Supt. of Documents, Washington, D. C. Dictionary of Occupational Titles, Vol. 1. Cat. No. L7.2:Oc1/965/v.1; Vol. 2 Cat. No. L7.2:Oc1/965/v.2; Supplement Cat. No. L7.2:Oc1/965/supp.2. TRANSPARENCIES Out Board Motor, Calhoun Co., Atlanta, Ga.	4. Panel discussion and evaluation of activity. 5. Oral questions. OR Discussions among students and teachers. OR Evaluation paper. OR Explain or demonstrate simple and basic skills learned about the marine industry.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
	(4) Mechanic (a) repair outboard engines (b) general knowledge of a wide variety of marine engines (c) change oil in lower unit (d) replace and inspect ignition system (e) replace and repair carburetors (f) rebuild power heads and lower units b. Service a small pleasure craft in class to give experience.	RESOURCE PERSON/ FIELD TRIP Have district representative give a talk on the marine business. Have a mechanic come and give a talk on the requirements and job opportunities in the marine field. Take a field trip to the nearest marine dealer.
UNIT III TRANSPORTATION A. MAINTENANCE 1. The student will identify some personnel involved in transportation maintenance, with emphasis on duties, skill requirements, and earnings.	UNIT III TRANSPORTATION A. MAINTENANCE 1. As a research project, the student will identify in a written list some of the people directly involved in maintenance. Information as to pay, skills, requirements, educational requirements, social acceptance, and environmental conditions should be contrasted.	UNIT III TRANSPORTATION A. MAINTENANCE 1. BOOKS Dictionary of Occupational Titles (Vols. I & II & Supplement). Supt. of Documents, Washington, D. C. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. Stockel, Martin W. Auto Service and Repair. Homewood, Ill.: Goodheart-Willcox Co., 1970.

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
(4) Mechanic (a) repair outboard engines (b) general knowledge of a wide variety of marine engines (c) change oil in lower unit (d) replace and inspect ignition system (e) replace and repair carburetors (f) rebuild power heads and lower units Service a small pleasure craft in class to give experience.	RESOURCE PERSON/ FIELD TRIP Have district representative give a talk on the marine business. Have a mechanic come and give a talk on the requirements and job opportunities in the marine field. Take a field trip to the nearest marine dealer.	
UNIT III ANSPORTATION MAINTENANCE As a research project, the dent will identify in a written t some of the people directly volved in maintenance. Information as to pay, skills, quirements, educational requirements, social acceptance, d environmental conditions ould be contrasted.	UNIT III TRANSPORTATION A. MAINTENANCE 1. BOOKS Dictionary of Occupational Titles (Vols. I & II & Supplement). Supt. of Documents, Washington, D. C. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. Stockel, Martin W. Auto Service and Repair. Homewood, Ill.: Goodheart-Willcox Co., 1970.	UNIT III TRANSPORTATION A. MAINTENANCE 1. Individual lists will be compiled into one list and checked to see contrast and likenesses of responses.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		Stockel, Martin W. Auto Mechanics Fundamentals, Homewood, Ill.: Goodheart-Willcox Co., 1970. Toboldt, W. K. and Larry Johnson. Automotive Encyclopedia, Homewood, Ill.: Goodheart-Willcox Co., 1970. FILM "Occupation: Auto Mechanic." From Marketing Staff, Service Section, General Motors Building, Detroit, Michigan 48202.	
B. SERVICE 1. Given the functions performed at a service station, the student will be exposed to the various job requirements represented in service as found in such a situation. These may also relate to other service occupations.	B. SERVICE 1. a. Simulate gasoline service station in operation including the following occupations: (1) Owner/Manager (2) Outside Labors: (a) gas pump labors (b) air and water (c) oil check and windshield (3) Inside labors: (a) salesman (b) tire repairman (c) car wash (d) brake service (e) minor repairman (f) safety inspection	B. SERVICE 1. BOOKLETS/FILMSTRIPS "An Introduction to the Automotive Electrical System" DR-9010--Booklet DR-9010K--Filmstrip "The Delcotron Generator & The Charging Circuit" DR-9011--Booklet DR-9011K--Filmstrip "Regulation & the Charging Circuit" DR-9015--Booklet DR-9015K--Filmstrip	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	Stockel, Martin W. Auto Mechanics Fundamentals, Homewood, Ill.: Goodheart-Willcox Co., 1970. Toboldt, W. K. and Larry Johnson. Automotive Encyclopedia, Homewood, Ill.: Goodheart-Willcox Co., 1970. FILM "Occupation: Auto Mechanic." From Marketing Staff, Service Section, General Motors Building, Detroit, Michigan 48202.	OR Teachers question students in group discussions about the operation and function of maintenance.
SERVICE Simulate gasoline service tation in operation including he following occupations: 1) Owner/Manager 2) Outside Labors: (a) gas pump labors (b) air and water (c) oil check and windshield 3) Inside labors: (a) salesman (b) tire repairman (c) car wash (d) brake service (e) minor repairman (f) safety inspection	B. SERVICE 1. BOOKLETS/FILMSTRIPS "An Introduction to the Automotive Electrical System" DR-9010--Booklet DR-9010K--Filmstrip "The Delcotron Generator & The Charging Circuit" DR-9011--Booklet DR-9011K--Filmstrip "Regulation & the Charging Circuit" DR-9015--Booklet DR-9015K--Filmstrip	B. SERVICE 1. Student could write a paper evaluating his experiences and role he played in the experience. OR Have class discussion on what they liked about their experiences and what they did not like about specific jobs.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	b. Set up a mock service station and use your car or a student's vehicle as a demonstrator. c. With proper arrangement made at a local service station, student will be allowed to perform the following: (1) pump gas (2) check engine oil (3) check transmission fluid (4) check batteries (5) check tires (6) wash and clean windshield (7) wash car (8) receive and deposit gas receipts (9) assist in changing tires (10) add water, oil, etc. to car	"It's Easy to Be An Expert . . . Battery Man, That Is" DR-9018--Booklet DR-9018K--Filmstrip "20,000 Volts Under the Hood (The Ignition Circuit)" DR-9020--Booklet DR-9020K--Filmstrip "Fleet Battery Care & Maintenance Program" DR-9021--Booklet DR-9021K--Filmstrip "The Cranking Circuit" DR-9025--Booklet DR-9025K--Filmstrip "Service Tips" DR-9019--Booklet only All above booklets and filmstrips from: Delco Products Division, Personnel Relations, 2000 Forrer Boulevard, Dayton, Ohio 45401. CHARTS "Automobile Chassis" "Automobile Fuel System" "Automobile Ignition System" "Brake System" "Rear Axle Assembly" "Steering System"	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Set up a mock service station and use your car or a student's vehicle as a demonstrator. With proper arrangement made at a local service station, student will be allowed to perform the following: 1) pump gas 2) check engine oil 3) check transmission fluid 4) check batteries 5) check tires 6) wash and clean windshield 7) wash car 8) receive and deposit gas receipts 9) assist in changing tires 0) add water, oil, etc. to car	"It's Easy to Be An Expert . . . Battery Man, That Is" DR-9018--Booklet DR-9018K--Filmstrip "20,000 Volts Under the Hood (The Ignition Circuit)" DR-9020--Booklet DR-9020K--Filmstrip "Fleet Battery Care & Maintenance Program" DR-9021--Booklet DR-9021K--Filmstrip "The Cranking Circuit" DR-9025--Booklet DR-9025K--Filmstrip "Service Tips" DR-9019--Booklet only All above booklets and filmstrips from: Delco Products Division, Personnel Relations, 2000 Forrer Boulevard, Dayton, Ohio 45401. CHARTS "Automobile Chassis" "Automobile Fuel System" "Automobile Ignition System" "Brake System" "Rear Axle Assembly" "Steering System"	OR Write a paper on a choice of an occupation and list points of liking this as a career, or not liking this as a career. OR Teacher-designed test to look for specific occupational general information. OR If handed out previously, a check list of points to be answered via experience; this to be gathered and scored.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		From: General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202. FILMSTRIP Gas Station Attendant, McGraw-Hill Publishing Co. TRANSPARENCIES Car Care, Allied Visual Education, Nashville, Tennessee. MISCELLANEOUS RESOURCES Have an oil company representative give a talk about the occupations in the major oil companies. Have gas station owner give a talk to the class.	
UNIT IV TRANSPORTATION A. EXPRESS & TRANSFER 1. Identify the various occupations	UNIT IV TRANSPORTATION A. EXPRESS & TRANSFER 1. a. Field Trip/Outside Visita-	UNIT IV TRANSPORTATION A. EXPRESS & TRANSFER 1. FILMSTRIPS People and Goods Travel,	A

LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	From: General Motors Corp., Public Relations Staff, Room 1-101, General Motors Building, Detroit, Michigan 48202. FILMSTRIP Gas Station Attendant, McGraw-Hill Publishing Co. TRANSPARENCIES Car Care, Allied Visual Education, Nashville, Tennessee. MISCELLANEOUS RESOURCES Have an oil company representative give a talk about the occupations in the major oil companies. Have gas station owner give a talk to the class.	
UNIT IV TRANSPORTATION EXPRESS & TRANSFER	UNIT IV TRANSPORTATION A. EXPRESS & TRANSFER	UNIT IV TRANSPORTATION A. EXPRESS & TRANSFER
. Field Trip/Outside Visita-	1. FILMSTRIPS People and Goods Travel,	1. On a teacher-designed instrument,

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
involved in freighting and distributing, including trucking, by ship, railway, or air.	tion After Class seeking information on current jobs such as manager, foreman, receiving department, shipping department, merchandise handlers, and drivers. b. Have express and transfer personnel visit class and discuss their role. c. Contact express and transfer service to allow a trucker to visit the school, show his means of transportation, and discuss his role and responsibilities.	Calhoun Co., Atlanta, Ga. The Development of a Railroad Network, Allied Sound and Visual Education, Nashville, Tennessee. Transportation: Our Railroads, 223 H Calhoun Co., Atlanta, Georgia. LOCAL RESOURCE PERSON PAMPHLETS Association of American Railroads, Transportation Building, Washington, D.C. Allied Van, Moving-Our Business, Atlanta, Ga.	
2. Actively seek and differentiate the levels of skills involved in freighting and determine pay scale in regard to skill, unskilled, and semi-skilled.	2. a. (Same as 1 above.) b. Develop a chart containing ranges of skills and pay scales represented.	2. (Same as 1 above.) BOOKS Occupational Outlook Handbook. Supt. of Documents, Washington, D.C.	
3. Gain insight into freight operations and job activities.	3. a. Simulate routing of activities of materials from one point to another. Stations in the laboratory will be identified by	3. Field trip to (or representative from) a freight terminal (railway or truck)	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
tion After Class seeking information on current jobs such as manager, foreman, receiving department, shipping department, merchandise handlers, and drivers. Have express and transfer personnel visit class and discuss their role. Contact express and transfer service to allow a trucker to visit the school, show his means of transportation, and discuss his role and responsibilities.	Calhoun Co., Atlanta, Ga. The Development of a Railroad Network, Allied Sound and Visual Education, Nashville, Tennessee. Transportation: Our Railroads, 223 H Calhoun Co., Atlanta, Georgia. LOCAL RESOURCE PERSON PAMPHLETS Association of American Railroads, Transportation Building, Washington, D.C. Allied Van, Moving-Our Business, Atlanta, Ga.	each student will be able to classify occupation on some predetermined emphasis placed by the instructor.
(Same as 1 above.) Develop a chart containing ranges of skills and pay scales represented.	2. (Same as 1 above.) BOOKS Occupational Outlook Handbook. Supt. of Documents, Washington, D.C.	2. Each student will classify occupations as being skilled, semi-skilled, unskilled.
Simulate routing of activities of materials from one point to another. Stations in the laboratory will be identified by	3. Field trip to (or representative from) a freight terminal (railway or truck).	3. Having previously discussed the handling of freight from pickup to delivery, the student should be able to

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
	name, activity, job requirements. b. Set up system of freight lines (truck) and warehouses and show how freight is transferred from line to line as it travels across U.S. Show the people involved with the freight. c. Simulate freight distribution center: (1) railway, (2) trucking, (3) air, or (4) sea.	Consult Terminal Manager for: (1) how freight is collected (2) how broken down (3) how distributed	
B. MATERIALS TRANSFER	B. MATERIALS TRANSFER	B. MATERIALS TRANSFER	
1. Students will be exposed to this method of material transportation and students will be able to identify or describe the education and skills required in this occupation.	1. a. Have representative from the pipeline industry to discuss the importance of the pipeline as a means of transportation for certain goods and to discuss the future of the industry. b. Students will construct a model pipeline and demonstrate the operations of moving different materials--both liquid and solid.	1. PAMPHLETS/BOOKS a. American Petroleum Institute, 1271 Avenue of the Americas, New York, N.Y. b. The Development of American Industries, Glover and Ladac.	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
name, activity, job requirements. Set up system of freight lines (truck) and warehouses and show how freight is transferred from line to line as it travels across U.S. Show the people involved with the freight. Simulate freight distribution center: (1) railway, (2) trucking, (3) air, or (4) sea.	Consult Terminal Manager for: (1) how freight is collected (2) how broken down (3) how distributed	trace the freight and name each job of person handling freight. OR Discussion (oral or written: Advantages/disadvantages of routing by rail, truck, sea, air; Occupational choices (likes/dislikes); General attitude toward movement of material as a career choice.
MATERIALS TRANSFER	B. MATERIALS TRANSFER	B. MATERIALS TRANSFER
Have representative from the pipeline industry to discuss the importance of the pipeline as a means of transportation for certain goods and to discuss the future of the industry. Students will construct a model pipeline and demonstrate the operations of moving different materials--both liquid and solid.	1. PAMPHLETS/BOOKS a. American Petroleum Institute, 1271 Avenue of the Americas, New York, N.Y. b. The Development of American Industries, Glover and Ladac.	1. Teacher-designed testing instrument. OR Question and answer period. OR Evaluation of model by committee of "experts."

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
2. Students will describe occupational hierarchies associated with the preferred occupations, of his choice, and requirements for moving to a higher position.	2. Simulate jobs that exist in the industry: (1) professional (2) technical (3) skilled (4) unskilled	2. BOOKS/PAMPHLETS Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. "Job Analysis: Training & Reference Manual for Job Analysis." Cat. No. L. 7. 61: E-3. Supt. of Documents, Washington, D. C. "Petroleum Industry." Cat. No. L2. 3:1650-107. Supt. of Documents, Washington, D. C. "Plumber & Pipefitter." Cat. No. L2. 3:1650-77. Supt. of Documents, Washington, D. C.	
3. Student will be introduced to some of the physical aspects found in the transfer of materials.	3. Given proper equipment, the student will thread and connect a simulated fuel line distribution system. Activities could include: (1) measurement of pipe (2) cutting and threading pipe (3) selection of elbows, nipples, and connecting devices (4) checking system (5) operating system	3. Instructor demonstration in equipment usage.	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Simulate jobs that exist in e industry: (1) professional (2) technical (3) skilled (4) unskilled	2. BOOKS/PAMPHLETS Occupational Outlook Handbook. Supt. of Documents, Washington, D. C. "Job Analysis: Training & Reference Manual for Job Analysis." Cat. No. L. 7. 61: E-3. Supt. of Documents, Washington, D. C. "Petroleum Industry." Cat. No. L2. 3:1650-107. Supt. of Documents, Washington, D. C. "Plumber & Pipefitter." Cat. No. L2. 3:1650-77. Supt. of Documents, Washington, D. C.	2. Observation of simulated job description.
Given proper equipment, e student will thread and con- ct a simulated fuel line dis- ibution system. Activities uld include: (1) measurement of pipe (2) cutting and threading pipe (3) selection of elbows, nipples, and connecting devices (4) checking system (5) operating system	3. Instructor demonstration in equipment usage.	3. A workable system along with a discussion of reaction to activity and implications. OR Participation in individual and group experiences which contribute to personal development and discussion.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
4. Student should be able to identify the jobs connected with the construction and operation of pipelines and sub-stations.	4. Have student make a list of jobs on the construction of a pipeline. Have him make another list of jobs connected with the maintenance of the pipeline.	4. (All previous resources.)	
UNIT V TRANSPORTATION	UNIT V TRANSPORTATION	UNIT V TRANSPORTATION	
A. BUS	A. BUS	A. BUS	
1. Student will identify and list personnel involved in passenger transportation in respect to education, skills and other requirements to successfully maintain a job in preferred occupation.	1. Interview manager of bus terminal regards to: (1) health requirement (2) education requirement (3) opportunity outlook (4) hazards (5) skills	1. BOOKS & REFERENCES "Driving Occupations." Cat. No. L2.3:1650-94. Supt. of Documents, Washington, D.C. "Traffic Manager." Cat. No. L2.3:1650-5, Supt. of Documents, Washington, D.C.	
2. List factors showing that group safety and the value of human dignity is in observance and practiced.	2. Solicit: pamphlet, booklet, and other information from Greyhound and National Trailway: (1) compare growth and loss (2) safety features (3) traveling distance: (a) fair weather (b) inclement weather	2. RESOURCES How to Better Avoid Accidents, Rev. ed. Crowell, 1957 Film 16mm--The American Roads. Ford Motor Co., Dearborn, Michigan.	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Have student make a list of s on the construction of a eline. Have him make ther list of jobs connected n the maintenance of the pipe-.	4. (All previous resources.)	4. Teacher-designed written or oral instrument.
UNIT V TRANSPORTATION	UNIT V TRANSPORTATION	UNIT V TRANSPORTATION
BUS	A. BUS	A. BUS
nterview manager of bus minal regards to:) health requirement) education requirement) opportunity outlook) hazards) skills	1. BOOKS & REFERENCES "Driving Occupations." Cat. No. L2.3:1650-94. Supt. of Documents, Washington, D.C. "Traffic Manager." Cat. No. L2.3:1650-5, Supt. of Documents, Washington, D.C.	1. Discussion of individual information from the interview.
olicit: pamphlet, booklet, other information from Grey- nd and National Trailway: compare growth and loss safety features traveling distance: (a) fair weather (b) inclement weather	2. RESOURCES How to Better Avoid Accidents, Rev. ed. Crowell, 1957 Film 16mm--The American Roads. Ford Motor Co., Dearborn, Michigan.	2. Paper on topic such as "Safety in Transportation" graded on content by interlocking communication skills and industrial arts instructors.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
3. Given the jobs connected with bus transportation, the students should be able to recall 90% of them by association to duties.	3. Set up mock bus station and have students act out the parts of manager, dispatcher, ticket salesman, porter, lunch counter salesman, bus driver, etc.	3. BOOK & REFERENCES All previous listings. Dictionary of Occupational Titles. Supt. of Documents, Washington, D.C. Occupational Outlook Handbook. Supt. of Documents, Washington, D.C.	
B. AIR	B. AIR	B. AIR	
1. a. Students will list personnel involved in the operation and maintenance of airports.	1. a. Simulate airport operation occupations, such as: Manager Traffic Controller Engine Mechanics FAA Inspector Communicating Technician Supporting Personnel Maintenance and Service Lunchroom Manager Radar Engineer Pilot-Co-Pilot Stewardess Weather Forecaster	1. FILMSTRIPS #1170, People and Goods Travel, Calhoun Co., Atlanta, Ga. Air Travel Set--Allied Sound and Visual Education, Nashville, Tennessee. Science at the Airport, #9 Set, Calhoun Co., Atlanta, Georgia. PAMPHLETS "Employment Outlook: Aircraft, missille, & spacecraft manufacturing." Cat. No. L 2.3:1650-108.	
b. Each student will actively seek information about each related occupation in regard to	b. Report on individual occupations. Visit three related industries. Field trip to local airport.	"Civil Aviation, pilots, co-pilots, flight engineers, stewardesses, aircraft me-	

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
Set up mock bus station and ave students act out the parts f manager, dispatcher, ticket alesman, porter, lunch counter alesman, bus driver, etc.	3. BOOK & REFERENCES All previous listings. Dictionary of Occupational Titles. Supt. of Documents, Washington, D. C. Occupational Outlook Handbook. Supt. of Documents, Washington, D. C.	3. Evaluate students on jobs they do in accordance with previously discussed terms. (Were they courteous, efficient, etc. ?) OR Written instrument designed by instructor.
AIR	B. AIR	B. AIR
Simulate airport operation occupations, such as: Manager Traffic Controller Engine Mechanics FAA Inspector Communicating Technician Supporting Personnel Maintenance and Service Lunchroom Manager Radar Engineer Pilot-Co-Pilot Stewardess Weather Forecaster Report on individual occupations. Visit three related industries. Field trip to local airport.	1. FILMSTRIPS #1170, People and Goods Travel, Calhoun Co., Atlanta, Ga. Air Travel Set--Allied Sound and Visual Education, Nashville, Tennessee. Science at the Airport, #9 Set, Calhoun Co., Atlanta, Georgia. PAMPHLETS "Employment Outlook: Aircraft, missille, & spacecraft manufacturing." Cat. No. L 2.3:1650-108. "Civil Aviation, pilots, co-pilots, flight engineers, stewardesses, aircraft me-	1. Group discussion on airport operations and related occupations. OR List fifteen related occupations (for grading) and skill involved. OR Each student discuss related occupation on own choice.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
policies, requirements, skills and procedures.		chanics, airline dispatchers, air traffic controllers, ground radio operators, and teletypists, traffic agents & clerks." Cat. No. L2.3:1650-117. "Employment requirements and changing occupational structure in civil aviation." Cat. No. L2.3:1367. All above from: Supt. of Documents, Washington, D.C.	
2. Given previous instruction on airport operations and airline operations, the student will be able to list the jobs in air transportation and tell they are employed by the airline, the airport, or the governmental agencies.	2. Set up mock airport. Have control tower, ticket office, lunch and baggage rooms, service area, occupations represented, etc.	2. (All previous in this section.)	
UNIT VI TRANSPORTATION A. SPACE	UNIT VI TRANSPORTATION A. SPACE	UNIT VI TRANSPORTATION A. SPACE	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	chanics, airline dispatchers, air traffic controllers, ground radio operators, and teletypists, traffic agents & clerks." Cat. No. L2.3:1650-117. "Employment requirements and changing occupational structure in civil aviation." Cat. No. L2.3:1367. All above from: Supt. of Documents, Washington, D.C.	
Set up mock airport. Have ntrol tower, ticket office, nch and baggage rooms, ser- e area, occupations rep- sented, etc.	2. (All previous in this section.)	2. On a teacher-designed instrument, matching items will be utilized to meet objective. OR Evaluation by observation role playing.
UNIT VI TRANSPORTATION	UNIT VI TRANSPORTATION	UNIT VI TRANSPORTATION
SPACE	A. SPACE	A. SPACE

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES
1. a. Students will list representative personnel involved in the operation and maintenance of the space center. b. Each student will actively seek information about each occupation as related to space. c. Each student will prepare a notebook on rockets and related information.	1. a, b. (1) Space orientation by teacher (2) Simulate space control center. Occupations: (a) radio technician (b) radar operator (c) navigator (d) flight engineer (e) clerical (f) computer operators (g) weather technician (h) support personnel: 1. services 2. mechanics c. Prepare a notebook on rockets, rocket engines and related information. d. Field trip to local industries using computers or to the airport's related occupations, such as: (1) observations (2) radio operators (3) radar (4) navigator (5) weather (6) support personnel	1. FILMS "Project Apollo-Manned Flight to the Moon-HQ 88-1962" color, 13 minutes. "A Voice for Mercury HQ 66-1961" color, 14.5 minutes. The above films from: NASA John F. Kennedy Space Center, Code SOP 323, Kennedy Space Center, Florida 32899. FILMSTRIPS/FILM LOOPS 8mm Silent Loop--Space and Flight series, Calhoun Co., Inc. Set #9--405620 (Filmstrip) Science at the Airport, Allied Sound & Visual Education, 206 12th Avenue, Nashville, Tenn. LECTURE/DEMONSTRATION PROGRAM Use of visiting "Spacemobile" contact: Educational Programs Office, NASA John F. Kennedy Space Center, Kennedy Space Center, Florida 32899.

EARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
b. 1) Space orientation by teacher 2) Simulate space control center. Occupations: (a) radio technician (b) radar operator (c) navigator (d) flight engineer (e) clerical (f) computer operators (g) weather technician (h) support personnel: 1. services 2. mechanics Prepare a notebook on rock-ts, rocket engines and related nformation. Field trip to local industries sing computers or to the air-ort's related occupations, uch as: 1) observations 2) radio operators 3) radar 4) navigator 5) weather 6) support personnel	1. FILMS "Project Apollo-Manned Flight to the Moon-HQ 88-1962" color, 13 minutes. "A Voice for Mercury HQ 66-1961" color, 14.5 minutes. The above films from: NASA John F. Kennedy Space Center, Code SOP 323, Kennedy Space Center, Florida 32899. FILMSTRIPS/FILM LOOPS 8mm Silent Loop--Space and Flight series, Calhoun Co., Inc. Set #9--405620 (Filmstrip) Science at the Airport, Allied Sound & Visual Education, 206 12th Avenue, Nashville, Tenn. LECTURE/DEMONSTRATION PROGRAM Use of visiting "Spacemobile" contact: Educational Programs Office, NASA John F. Kennedy Space Center, Kennedy Space Center, Florida 32899.	1. Class discussion of related occupation with structured questions interjected by instructor. OR Observe technique of role playing such as operation of a 2-way radio communication system. OR Students will discuss or write feeling towards specific occupation. OR Notebook grading for content.

OBJECTIVES	LEARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	S
		PAMPHLETS/BOOKS "Science and Engineering Careers in Government." Cat. No. CS 1.2 Sci 2/5/967, Supt. of Documents, Washington, DC "Space resources for the high school industrial arts resource units, 1967." Cat. No. NAS1. 19:44, Supt. of Documents, Washington, D. C. TRANSPARENCIES Space Exploration Services, #23002-Calhoun Co., Atlanta, Ga.	
2. Given adequate instruction and resource material, the student should be able to list the general occupational groups involved in space travel.	2. Have student report on the different people (jobs) involved in a moon shot.	2. (All previously mentioned in this section.)	

ARNING EXPERIENCES	INSTRUCTIONAL RESOURCES	SUGGESTED EVALUATIONS
	PAMPHLETS/BOOKS "Science and Engineering Careers in Government." Cat. No. CS 1.2 Sci 2/5/967, Supt. of Documents, Washington, DC "Space resources for the high school industrial arts resource units, 1967." Cat. No. NAS1. 19:44, Supt. of Documents, Washington, D. C. TRANSPARENCIES Space Exploration Services, #23002-Calhoun Co., Atlanta, Ga.	
Have student report on the fferent people (jobs) involved a moon shot.	2. (All previously mentioned in this section.)	2. Teacher-designed instrument.